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ENVIRONMENTAL ASSESSMENT BOARD

VOLUME: 207

DATE: Tuesday, May 29, 1990

BEFORE:

A. KOVEN, Chairman

E. MARTEL, Member



FOR HEARING UPDATES CALL (TOLL-FREE): 1-800-387-8810

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HEARING ON THE PROPOSAL BY THE MINISTRY OF NATURAL
RESOURCES FOR A CLASS ENVIRONMENTAL ASSESSMENT FOR
TIMBER MANAGEMENT ON CROWN LANDS IN ONTARIO

IN THE MATTER of the Environmental
Assessment Act, R.S.O. 1980, c.140;

- and -

IN THE MATTER of the Class Environmental
Assessment for Timber Management on Crown
Lands in Ontario;

- and -

IN THE MATTER OF a Notice by the
Honourable Jim Bradley, Minister of the
Environment, requiring the Environmental
Assessment Board to hold a hearing with
respect to a Class Environmental
Assessment (No. NR-AA-30) of an
undertaking by the Ministry of Natural
Resources for the activity of timber
management on Crown Lands in Ontario.

Hearing held at the offices of the Ontario
Highway Transport Commission, Britannica
Building, 151 Bloor Street West, 10th Floor,
Toronto, Ontario, on Tuesday, May 29th, 1990,
commencing at 8:30 a.m.

VOLUME 207

BEFORE:

MRS. ANNE KOVEN
MR. ELIE MARTEL

Chairman
Member

A P P E A R A N C E S

MR. V. FREIDIN, Q.C.)	
MS. C. BLASTORAH)	MINISTRY OF NATURAL
MS. K. MURPHY)	RESOURCES
MR. B. CAMPBELL)	
MS. J. SEABORN)	MINISTRY OF ENVIRONMENT
MS. B. HARVIE)	
MR. R. TUER, Q.C.)	ONTARIO FOREST INDUSTRIES
MR. R. COSMAN)	ASSOCIATION and ONTARIO
MS. E. CRONK)	LUMBER MANUFACTURERS'
MR. P.R. CASSIDY)	ASSOCIATION
MR. H. TURKSTRA	ENVIRONMENTAL ASSESSMENT BOARD
MR. E. HANNA)	ONTARIO FEDERATION OF
DR. T. QUINNEY)	ANGLERS & HUNTERS
MR. D. HUNTER)	NISHNAWBE-ASKI NATION
MS. N. KLEER)	and WINDIGO TRIBAL COUNCIL
MR. J.F. CASTRILLI)	
MS. M. SWENARCHUK)	FORESTS FOR TOMORROW
MR. R. LINDGREN)	
MR. P. SANFORD)	KIMBERLY-CLARK OF CANADA
MS. L. NICHOLLS)	LIMITED and SPRUCE FALLS
MR. D. WOOD)	POWER & PAPER COMPANY
MR. D. MacDONALD	ONTARIO FEDERATION OF LABOUR
MR. R. COTTON	BOISE CASCADE OF CANADA LTD.
MR. Y. GERVAIS)	ONTARIO TRAPPERS
MR. R. BARNES)	ASSOCIATION
MR. R. EDWARDS)	NORTHERN ONTARIO TOURIST
MR. B. McKERCHER)	OUTFITTERS ASSOCIATION

APPEARANCES: (Cont'd)

MR. L. GREENSPOON)	NORTHWATCH
MS. B. LLOYD)	
MR. J.W. ERICKSON, Q.C.)		RED LAKE-EAR FALLS JOINT
MR. B. BABCOCK)	MUNICIPAL COMMITTEE
MR. D. SCOTT)	NORTHWESTERN ONTARIO
MR. J.S. TAYLOR)	ASSOCIATED CHAMBERS
		OF COMMERCE
MR. J.W. HARBELL)	GREAT LAKES FOREST
MR. S.M. MAKUCH)	
MR. J. EBBS		ONTARIO PROFESSIONAL
		FORESTERS ASSOCIATION
MR. D. KING		VENTURE TOURISM
		ASSOCIATION OF ONTARIO
MR. D. COLBORNE)	GRAND COUNCIL TREATY #3
MS. S.V. BAIR-MUIRHEAD)	
MR. R. REILLY		ONTARIO METIS &
		ABORIGINAL ASSOCIATION
MR. H. GRAHAM		CANADIAN INSTITUTE OF
		FORESTRY (CENTRAL
		ONTARIO SECTION)
MR. G.J. KINLIN		DEPARTMENT OF JUSTICE
MR. S.J. STEPINAC		MINISTRY OF NORTHERN
		DEVELOPMENT & MINES
MR. M. COATES		ONTARIO FORESTRY
		ASSOCIATION
MR. P. ODORIZZI		BEARDMORE-LAKE NIPIGON
		WATCHDOG SOCIETY

APPEARANCES: (Cont'd)

MR. R.L. AXFORD	CANADIAN ASSOCIATION OF SINGLE INDUSTRY TOWNS
MR. M.O. EDWARDS	FORT FRANCES CHAMBER OF COMMERCE
MR. P.D. McCUTCHEON	GEORGE NIXON
MR. C. BRUNETTA	NORTHWESTERN ONTARIO TOURISM ASSOCIATION

I N D E X O F P R O C E E D I N G S

<u>Witness:</u>	<u>Page No.</u>
<u>MAXWELL McCORMACK,</u>	
<u>RODERICK CARROW,</u>	
<u>ROBERT TOMCHICK,</u>	
<u>WILLIAM SMITH,</u>	
<u>MURRAY FERGUSON,</u>	
<u>PHILIP BUNCE,</u>	
<u>GEORGE STANCLIK, Resumed</u>	36844
Cross-Examination by Mr. Castrilli	36844
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I N D E X O F E X H I B I T S

<u>Exhibit No.</u>	<u>Description</u>	<u>Page No.</u>
1193	Thesis entitled: Effect of Aerial Applications of 2,4-D on the Height Growth of Picea Glauca (Moench) Voss and Picea Mariana (Mill) by Philip M. Bunce, Lakehead University, May, 1979.	36883
1194	Paper entitled: Successful Silvicultural Operations without Herbicides in a Multiple Use Environment, by Thomas C. Turpin.	36965
1195	Final version of article entitled: Control of Red Alder by Cutting produced by USDA Forest Service, May, 1989.	36985
1196	Minutes of annual meeting of OPFA held in Sault Ste. Marie, February 21-23, 1990.	37013
1197	Overview document of Canadian Professional Foresters Associations and Ontario policy paper re herbicide use in forestry dated September, 1983.	37025
1198	Three-page document containing cover letter dated May 14, 1990 dealing with 1990 resolution with two resolutions attached, February 1, 1984 (Thunder Bay) and January 31, 1986 (Sudbury).	37026
1199	Editorial published in Professional Forester dated April, 1990.	36037

1 ---Upon commencing at 8:30 a.m.

2 MADAM CHAIR: Good morning. Please be
3 seated.

4 Good morning, Mr. Castrilli.

5 MR. CASTRILLI: Good morning, Madam
6 Chair.

7 Panel, good morning.

8
9 MAXWELL McCORMACK,
10 RODERICK CARROW,
11 ROBERT TOMCHICK,
12 WILLIAM SMITH,
MURRAY FERGUSON,
PHILIP BUNCE,
GEORGE STANCLIK, Resumed

13 CROSS-EXAMINATION BY MR. CASTRILLI:

14 Q. I would like to refer you first to
15 page 65 of your evidence, Exhibit 1131.

16 The italicized portion of that page,
17 being the second paragraph on that page reads that:

18 "The purpose of release is to ensure that
19 the preferred crop is the dominant
20 species in the stand. Eradication of
21 competing vegetation is not economically
22 feasible or environmentally desirable.
23 Simply reducing the weeds to a
24 subordinate position is sufficient in
25 most instances."

1 And reading to the end of that paragraph:
2 "In other cases, only temporary removal
3 is required, and reinvasion can be
4 allowed once the conifers are
5 established."

6 Now, we asked you an interrogatory
7 question in relation to that paragraph, and that's
8 Interrogatory question No. 4 which is found at page 5
9 of Exhibit 1192.

10 Dr. McCormack, if you place any more
11 documents in front of you I won't be able to see you.

12 DR. McCORMACK: A. The number of that
13 interrogatory again, please?

14 Q. It was Interrogatory Question No. 4
15 and it's page 5 of Exhibit 1192. The question we asked
16 was a question to:

17 "Provide particulars respecting the
18 overall change from original stands the
19 industry expects in species composition
20 as a result of release programs by:
21 (a) different geographic area; and.
22 (b) species."

23 I will just read the answer into the
24 record, and then I just have a brief question about the
25 answer. The answer indicates that:

1 "The italicized paragraph is a quote from
2 Walstad et al. (1987) (Overview of
3 Vegetative Management Alternatives, In,
4 Forest Vegetation Management for Conifer
5 Production, Chapter 6). It is a general
6 statement which is supported by evidence
7 contained in the Statement of Evidence.
8 Crop species and vegetation will vary by
9 site quality and related factors.
10 Properly administered release treatments
11 will increase the proportion of
12 prospective crop trees (e.g., jack
13 pine, black spruce, white spruce), but it
14 can be expected that other species
15 present at the time of release will
16 remain in redistributed, reduced
17 proportions."

18 So, gentleman, if I can take from your
19 answer that the overall objective of the spraying
20 program is to increase the proportion of conifers, but
21 you do not know what the increase will be for all
22 sites; is that a fair statement?

23 A. A proportion increase is -- and I
24 illustrated some examples of that with the slides that
25 I showed when I presented my evidence. There is no

1 absolute value that can be predetermined as far as the
2 number of trees are concerned, but the proportion
3 increases to a stocking level that management would
4 consider desirable and what in some cases might be
5 required in order to provide sufficient potentially
6 merchantable trees to make the stand manageable.

7 That is one of the first objectives when
8 a tending treatment is applied.

9 Q. Would it be fair to say that the
10 objective is to, as well, increase the amount of
11 conifers above the amount in the original stand?

12 A. No, it wouldn't. I think you're only
13 dealing with what is there in the first place, either
14 planted or obtained naturally, and the tending
15 treatment is to secure through improved conditions for
16 establishment and early development of a higher
17 proportion of those crop trees than would take place if
18 the tending treatment were not applied.

19 Q. I would like to refer you to the next
20 interrogatory which is on page 6 of Exhibit 1192,
21 Question No. 5. I won't read it. Since it's a lengthy
22 answer, we will just take the statements read.

23 What we wanted to know was the difference
24 between the total volume of all species of the control
25 stand compared to the treated stand.

1 As I understand your answer, because of
2 the numerous number of citations, it was a task that
3 would be too time consuming and costly.

4 Would it be fair to say, gentleman, that
5 you do not know -- excuse me, you did not indicate what
6 change there was in the total stand volume of all
7 species of the stand?

8 A. Mr. Castrilli, if you mean by all
9 species that those volume changes be reflected in real
10 number for each species, then that would be extremely
11 difficult and probably impossible to determine at this
12 time.

13 If it is a volume for the merchantable
14 stand that is the merchantable species or perhaps in
15 some cases a composite of several merchantable species,
16 then those are the numbers which are the basis for the
17 volume or growth gains reflected in these figures.

18 It's difficult to single out specific
19 cases because here we took advantage of numerous
20 people, years of effort, coordinated by Dr. Stewart, to
21 come up with these figures which are a result of
22 surveying the some 260 citations which he has in his
23 bibliography.

24 Q. Do you know if the total volume
25 production of all trees, not just the crop trees, on

1 the treated areas was higher on the control than on the
2 treated areas?

3 A. That also would be difficult to
4 determine because these citations go across a wide
5 range of commercial species and across all commercial
6 forest regions in North America.

7 Q. Dr. McCormack, does tending the use
8 of herbicides reduce total volume production of all
9 species combined for a given site?

10 A. Could you explain what you mean here
11 by all species.

12 Q. Not just your crop tree, does it
13 reduce it for all species?

14 A. In terms of the potential for the
15 total volume which could be produced per unit of land
16 area in the site in question?

17 Q. Yes, that's right.

18 A. And your question regards total
19 volume rather than merchantable volume?

20 Q. Total volume.

21 A. Total volume. In most cases no, but
22 I suspect there are some exceptions out there somewhere
23 where when one includes all components of
24 non-merchantable volume, which would include volumes of
25 stems that are small diameter, crooked, suppressed and

1 such as that. You might find a few cases where the
2 total volume was equal to or exceeded that on a treated
3 area.

4 I think the question comes down to
5 definition of volume and the relative values of
6 merchantable volume versus total volume.

7 MADAM CHAIR: Dr. McCormack, you have
8 said repeatedly that the consequence of tending is
9 primary short term suppression of the vegetation.

10 DR. McCORMACK: Yes, Madam Chair, that's
11 the initial objective.

12 MADAM CHAIR: And is that the reason for
13 your answer that: In most cases, no, the total volume
14 is not permanently decreased?

15 DR. McCORMACK: Well, in part what
16 happens is there is, as reflected in the figures in our
17 statement of evidence, such an increase in the volume
18 of the merchantable stems that that often
19 over-compensates for any other losses of some of the
20 suppressed stems. The suppressed stems often remain as
21 components of the stand, they do not develop a volume
22 that is any way comparable to the species which are
23 considered merchantable.

24 So that's why the question of what is
25 merchantable is so important. There is often

1 considerable volume there, but it is of dimensions and
2 quality which make it usable only for things like fuel
3 wood or a lower valued product, if at all.

4 MR. MARTEL: What is the permanent
5 reduction then? Have you any way of knowing what you
6 knock back, how much of it will revegetate, or is there
7 going to be a fair amount that will not come back?

8 DR. McCORMACK: Well, there is some that
9 doesn't come back which usually would be species which
10 are lost in the normal course of succession anyhow; for
11 example, an early competitor in the newly regenerated
12 site could very often be raspberry.

13 Raspberry is an aggressive competitor in
14 the early stages of development, but in any forest
15 stand which develops into what we would consider to be
16 an approaching maturity stand of trees, as the crowns
17 close and those trees develop that raspberry is lost,
18 and by the time it reaches full maturity there is
19 usually no evidence whatsoever of that raspberry unless
20 there is a blowdown or opening in the stand.

21 So that's the type of thing. A pin
22 cherry would be another example which is obvious in its
23 presence in the early stages, but as a forest of any
24 trees that reach what we would consider to be the size
25 of a tree, a single woody stem with a full crown, a pin

1 cherry would not be present in such a stand either.

2 So many of these species which are
3 suppressed by tending in the early stages of
4 development fade out of a developing stand in any case.

5 MR. CASTRILLI: Q. Dr. McCormack, so I
6 am clear on your testimony I just want to ask you this
7 further question. If a species that you've sprayed to
8 suppress does not return as a result of the spraying
9 and this species could be used in future by the
10 Industry, have you reduced the total production of the
11 area for the future?

12 DR. MCCORMACK: A. Definitely not and,
13 for that matter, of any species that could remain
14 within a stand over a period of time or even be a
15 component of the -- in the final stages of a stand
16 approaching maturity, I know of no case beyond small
17 plot work where any species which would have been
18 present in the final stand is not present following
19 herbicide tending activities.

20 Furthermore, when a manager puts forth a
21 prescription, the basic technology which I've been
22 describing can be adapted to a wide variety of crop
23 trees; for example, if a management objective was to
24 increase the proportion of red maple, mountain maple,
25 maples are good examples, perhaps white birch, this

1 same technology can be modified to do just that. .

2 So the capabilities are there to maintain
3 a component or favour most of what anyone might expect
4 to be a merchantable species some time into the future,
5 including what we refer to as hardwood species.

6 Q. Is the overwhelming amount of -- is
7 the predominant amount of the tending done in this
8 province done to release hardwoods?

9 I will direct that question to the OFIA
10 members.

11 MR. FERGUSON: A. No.

12 MR. TOMCHICK: A. It's to release
13 softwoods.

14 Q. Dr. McCormack, continuing with you.
15 Is a further purpose of the tending exercise to get the
16 desired -- your desired crop tree to be bigger earlier
17 in order to harvest it earlier?

18 DR. McCORMACK: A. Certainly an
19 objective is earlier establishment and rapid growth. I
20 think it would depend on the manager's objective as to
21 the concept of how large a merchantable tree is at the
22 time of harvest.

23 An objective that is inherent through
24 this entire framework is to have a rotation that fits
25 the economic structure that is desirable within

1 management and a principle in forest management, when
2 looking at length of rotation, is that in a general
3 sense shorter rotations are reduced risks to the crop.
4 They also reflect a healthier stand with more vigor,
5 just overall better condition, and such trees are part
6 of the overall management in terms of resisting other
7 detrimental agents, such a pathogens or insects.

8 It has been shown over the years that
9 trees that are more vigorous and healthy can withstand
10 initial impacts of these pest problems. Consequently,
11 this approach overall in management is a more positive
12 way to go.

13 Q. Gentlemen, I will direct my next
14 question to the OFIA members. Would it be fair to say
15 that the tending program compared to the spray program
16 is devoted to cutting the rotation time of the desired
17 tree species?

18 MR. STANCLIK: A. No, the purpose of our
19 tending program is to ensure survival of the crop trees
20 to the point of free to grow.

21 Without a tending program on many sites,
22 it would be very difficult to ensure that there are
23 enough crop trees there to be able to declare the area
24 free to grow without controlling the vegetation.

25 Q. So your testimony is, without tending

1 of some type you would not get to free to grow; is that
2 correct?

3 A. That's correct.

4 Q. Thank you.

5 A. In the desired species.

6 Q. I want to direct your attention again
7 to your interrogatory question No. 5 on page 6. You
8 refer there -- sorry, I don't know who actually
9 prepared this answer? Dr. McCormack?

10 DR. McCORMACK: A. (nodding
11 affirmatively)

12 Q. Dr. McCormack. In your answer you
13 refer to a quote by Stewart as saying:

14 "...increased volume growth for crop
15 trees from 40 to 100 per cent or more in
16 the short term following treatment..."

17 Do you see that? That's in the first
18 paragraph of your answer.

19 A. Yes, I do, and that's in part the
20 statement that exists on page 65 of the statement of
21 the evidence where it refers to 40 to 100 per cent.

22 Q. So if I understand your answer with
23 respect to the desired tree species, a volume increase
24 is expected in the short term?

25 A. Yes. This is a direct reflection of

1 the vigor and health of these trees I referred to a few
2 moments ago, in that one of the first expressions in
3 the actual dimensions of a tree in that regard is the
4 stem caliper and development of buds which determine
5 greatly the volume of these young trees. I illustrated
6 that with some of my photographs as well.

7 Q. Dr. McCormack, do you expect an
8 increase in growth in the long-term?

9 A. An increase in growth over what would
10 have taken place without the tending treatment, yes,
11 that in part is the objective.

12 Q. That's the objective. Is that the
13 expected result? Has that been the observed result?

14 A. When one addresses long term where we
15 have been able to observe long term results - and by
16 long term, perhaps we should define this, is how long
17 is long term - I guess I would be inclined to look at
18 studies or measurements that have extended beyond, say,
19 20 years. If that's a fair...

20 Q. In you're comfortable with 20 years,
21 I am content to have your answer --

22 A. We should have a reference point if
23 we are going to talk long term, but certainly it would
24 exceed 20 years, if that sounds like a good benchmark
25 to use in this discussion.

1 Q. It's your answer. If you are content
2 with 20 years, let's answer it on the basis of 20
3 years.

4 A. I would say my response is definitely
5 positive.

6 Q. Let me be sure I understand your
7 answer, then. You have observed increases in growth in
8 the long term, defined as 20 years?

9 A. I can say yes, I have observed such
10 and I have observed numbers collected by others. I
11 can't recall that I have ever actually made those
12 measurements myself.

13 Q. And is any of that referred to in the
14 literature you provided in your evidence?

15 A. In terms of benefits from release
16 treatments, yes.

17 Q. Could you refer us to where?

18 A. I would refer first to Table 8 on
19 page 128 where it shows periods of response for red
20 pine of 46 years, 31 and 27 years, there is one case
21 getting quite close with black spruce in New Brunswick
22 at 16 years and then of course we have -- well, there
23 is also periods of response reflected in Table 9 on
24 page 130 of 25 years for red pine and 22 years for
25 white pine, and MacLean and Morgan data which are

1 summarized in Table 10 on page 132 where there are 28
2 year response data for chemical release and 32 year
3 response data for manual release.

4 And I would also refer back to one
5 photograph which I showed in the first portion of
6 slides, which were part of my evidence, where I showed
7 side by side a forest stand on the right side of the
8 road. It had been treated on the left side, not
9 treated, and it was a visual example of 22 years.

10 Q. Do you recall the crop tree species
11 in that photograph?

12 A. In that photograph the principal crop
13 tree was white pine and there were other conifer
14 components of the stand. It happened the owner of that
15 parcel had a sawmill producing white pine lumber, so
16 their principal interest was white pine.

17 Q. Were any of these black spruce?

18 A. There were black spruce in -- the
19 longest term of actual measurements and observations on
20 black spruce that I'm personally familiar with would be
21 at least reflected in data from the region on the New
22 Brunswick black spruce reference in Table 8 on page
23 128.

24 This would be what I count to be the 11th
25 one down in Table 8 which was work carried out by John

1 Henderson. His Master's thesis which was completed in
2 1986. This was carried out in the operations of J.D.
3 Irving Limited in New Brunswick and was a portion of
4 large areas which had been treated. Where he had his
5 plots it happened to be 16 years, but I have observed
6 areas that have been released principally through
7 aerial application of herbicide for a period of time
8 that equal 20 years.

9 I have observed those trees, I have
10 extracted increment cords from those trees, both black
11 spruce and white spruce, and I would say they are
12 definitely, in their growth response development,
13 consistent with the other numbers that we've presented
14 here.

15 Q. Dr. McCormack, if you allow conifers
16 to grow faster by removing or reducing hardwood
17 competition, aren't the conifers going to compete with
18 each other?

19 MR. MARTEL: What was the last part of
20 the question, Mr. Castrilli, I missed it?

21 MR. CASTRILLI: I will repeat it, Mr.
22 Martel.

23 MR. MARTEL: Thank you.

24 MR. CASTRILLI: Q. If you allow conifers
25 to grow faster by removing or reducing hardwood

1 competition, aren't the hardwoods going to compete with
2 each other?

3 DR. McCORMACK: A. Yes, they reach a
4 point where there will be some competition between the
5 trees of the same species. This is in part why
6 stocking levels and spacing guidelines are developed,
7 why managers at times must consider precommercial
8 thinning or hopefully if proper stocking levels are
9 developed early in a stand, that the first thinning
10 entry would be a merchantable thinning entry, but this
11 is also in part why it is necessary to carry out
12 tending that suppresses the competing vegetation.

13 This enables a manager to place his crop
14 trees at a spacing which will develop most efficiently
15 into merchantable size before they reach that point of
16 competing against themselves, so that the manager has
17 the highest possible amount of merchantable volume on
18 the site without encountering that problem and, at the
19 same time, achieving a larger average diameter of each
20 crop tree which provides a direct benefit to the
21 manager and reduced harvesting costs which become a
22 very important part of the overall economic structure
23 of securing raw material to support the mill or
24 whatever his end point of utilization might be.

25 Q. Dr. McCormack, in the long term,

1 won't the growth in conifers level off as the volume
2 increment slows down?

3 A. Not if the stand is properly managed
4 and full utilization is carried out by the manager and,
5 again, I offer commercial thinning as an option that
6 would enable a manager to do that.

7 Q. And if the stand is not properly
8 managed, can we expect that the growth in conifers
9 would level off as the volume increment slows down?

10 A. Yes, I would expect the growth would
11 level off, but that growth level would still be
12 significantly higher than what would have been achieved
13 if the stand had not been tended in its early stages of
14 development.

15 Q. Is it possible, Dr. McCormack, that
16 in the long term the growth in conifers will slow down
17 and return to what would have been the case without
18 tending?

19 A. Actual growth rate at a point in the
20 development of the stand, that could be the case, but
21 when that growth rate levels off, at that point it is
22 likely that there would be more merchantable volume
23 present in the stand when that growth rate was reduced
24 to that level.

25 The question in my mind here, Mr.

1 Castrilli, is that growth rate is one thing because
2 that is a change at a single point, total volume or
3 total growth in the stand at that time is something
4 else. Growth rate is a description of how it's
5 changing at that point, but does not necessarily
6 reflect the volume, merchantable volume, size of the
7 stand at that point.

8 MADAM CHAIR: Dr. McCormack, we have
9 heard in earlier evidence that young trees put on a
10 great deal of growth or the potential for growth, a lot
11 of that is put on when the stem is young.

12 DR. McCORMACK: The proportion of change
13 is greater, but one of the conditions that is often
14 difficult to keep in mind as we look at forestry is:
15 As they get larger, in cases where, for example, we are
16 measuring radial growth, the change in diameter, as a
17 tree gets larger, it takes an ever smaller amount of
18 radial growth as measured directly in centimetres
19 change to add an equivalent amount or even more volume
20 because the basic cone on which that narrower growth
21 ring is being added -- to which it is being added is
22 getting larger.

23 So the shell in effect of that one year's
24 growth that's added on to the cone can be much narrower
25 in width, but the total volume added on to the stem is

1 less. That is an example of why we must be very
2 careful how we measure growth; absolute volume gain or
3 proportion of change, or which dimension of the tree is
4 being measured.

5 MR. CASTRILLI: Q. Dr. McCormack, could
6 I refer you now to tables -- I'd like you to consider
7 them at the same time, Tables 1 and 2, which are on
8 pages 93 and 98 respectively of Exhibit 1131.

9 MADAM CHAIR: What page is that, Mr.
10 Castrilli?

11 MR. CASTRILLI: I believe these are both
12 pages that have been amended, pages 93, Table 1 and 98,
13 Table 2.

14 MADAM CHAIR: Thank you.

15 MR. CASTRILLI: Q. We asked this panel
16 an interrogatory with respect to those two tables and
17 that is Question 10 -- or Interrogatory Question No. 10
18 at page 11 of Exhibit 1192.

19 Q. Dr. McCormack, we asked you in
20 Question (a) to provide data demonstrating the
21 successive herbicide sprays for both site preparation
22 and conifer release by individual operation for each of
23 the years listed in the tables, and Question 10(b) we
24 asked you to indicate the time of year and type of
25 application.

1 I would just like to focus on Question 10
2 for a moment if I might, 10(b) that is noted at the
3 bottom of page 11 of Exhibit 1192, that the time of
4 year for site preparation treatments generally is June
5 to August and the season of treatment for tending and
6 applications generally is July to September.

7 DR. McCORMACK: Sorry, Mr. Castrilli,
8 what were you referring --

9 Q. I'm sorry, I was referring to your
10 answer in Interrogatory Question No. 10(b) on page 11
11 of Exhibit 1192?

12 A. Okay. It was the page 11 that
13 confused me. Okay.

14 Q. Do you have the reference now?

15 A. I have it.

16 Q. Do we have documentation that has
17 been filed by you, Dr. McCormack, that shows the
18 expected effect of spraying at different times?

19 A. I don't recall that any detailed
20 information that relates effects of spraying at
21 different times has been reported in any detail in any
22 of the evidence.

23 I think one has to keep in mind that this
24 of course will vary by site and by the respective
25 phenological conditions of the vegetation at any site

1 which is being considered for treatment.

2 In terms of the details of the answer to
3 this question where this relates to specific operations
4 of the Industry people representing OFIA, that for
5 details in terms of the sources of these numbers and
6 the specifics of their operations, I think it would be
7 appropriate for any questions that relate to that, that
8 they be referred to the industrial panel.

9 Q. I intend to do that. I wasn't
10 certain enough from the answer who provided the answer.

11 A. I'm certainly ready to discuss
12 effects of a herbicide treatment across different
13 seasons of application, if that is the main concern of
14 the question.

15 Q. I just wanted to establish, first of
16 all, what we had on the record and what we didn't have.
17 Did any of the four -- I guess five members from the
18 OFIA have any additional -- let me repeat the question,
19 so you are clear on what I want.

20 I wanted to know if there has been any
21 documentation filed that shows the expected effect of
22 spraying at different times.

23 MR. STANCLIK: A. I don't know if there
24 has been any documentation filed, but your Question No.
25 12 has the sources where we determined what time we

1 should be applying the herbicide.

2 The answer to the question in part (a),
3 you can get the information from manufacturers'
4 instructions and guideline literature, published
5 research results and recommendations by experienced
6 experts and specialists, records of past treatments in
7 the area of the planned treatment or in similar areas,
8 and (4) professional judgment based on past experience
9 and knowledge.

10 Q. So those are the factors you
11 consider?

12 A. Yes. Does that help?

13 Q. I just wanted to confirm my
14 understanding. Is there any evidence on the record
15 that shows the expected effect of spraying at different
16 times, quite apart from the factors that you might
17 consider; do we have any hard evidence?

18 DR. McCORMACK: A. Well, in fact the
19 information which have been developed in that list of
20 sources in the answer to Question 12 part (a) reflect
21 what is available in the literature, but this has been
22 so well defined over our years of experience that the
23 guidelines are well established and its managers have
24 those guidelines to determine when the best times to
25 spray are and times to avoid, so that they are pretty

1 well followed now and it has not been one of the more
2 immediate questions of concern in developing
3 prescription decisions.

4 Q. Is the answer to my question; no, we
5 don't?

6 A. The information is there and has been
7 established over time, but...

8 Q. Sorry, excuse me?

9 A. What I tried to explain is it's so
10 well established --

11 Q. I'm sorry, I missed the first part of
12 your response.

13 A. The information is available and has
14 been well established over time, but the fact that it
15 is so well established and the best times to spray so
16 well defined that that was not a principal matter of
17 concern in putting this statement of evidence together.

18 Q. And as part of the documentation that
19 has been filed, do we have any information that shows
20 the expected effect of spraying at different
21 application rates?

22 A. This is reflected in some of the
23 evidence that I presented. In particular, the most
24 recent example that comes to mind were the responses
25 illustrated in the recent publication from the

1 Department of Lands and Forests in Nova Scotia that
2 showed some different effects. I would also add
3 that --

4 Q. Dr. McCormack, that's 11(b) in
5 Exhibit 1184, is that the reference?

6 A. I would need some assistance on that.

7 Q. That's Norway spruce?

8 A. Norway spruce plantation response to
9 glyphosate recently published by Lands and Forests in
10 Nova Scotia is the one example that comes to mind,
11 however, in my Figure 2 I illustrate a range of rates.

12 Q. I'm sorry, there are many figure 2's
13 in this hearing. Which one are you referring to?

14 A. The Figure 2 in our statement of
15 evidence, I'm sorry. Yes, page 122 in our statement of
16 evidence.

17 This figure shows the guideline range of
18 rates and this model represents the rates of
19 application. In this case it shows the product in
20 litres per hectare ranging from three litres per
21 hectare to six litres per hectare.

22 Those are numbers -- rates which have
23 been established over a period of time, research which
24 was initiated with this product in 1972, and at that
25 time a range of rates that exceeded that three to six

1 litres per hectare at both ends where the work began
2 and was carried out over many years, probably from --
3 it was initiated in '72 and carried through up to the
4 point of when the first label was issued for the use of
5 the product, which would have been as Roundup in the
6 United States, in 1980 which reflected that eight years
7 of work of testing rates. So that this had been
8 narrowed down before the product was registered for
9 use.

10 Then within that -- within this range
11 some difference can be observed, but those exist in the
12 guidelines referred to in the answer to Question 12.
13 So that, as I have tried to indicate, that this has
14 been so well established that it's well understood by
15 practitioners at this time, the relationship between
16 rates of application and expected target and crop tree
17 condition following treatment.

18 Q. Is it fair to say, Dr. McCormack,
19 that tending later in the year is not as effective for
20 suppressing hardwoods?

21 A. Mr. Castrilli, could you explain what
22 you mean by later in the year, maybe put a --

23 Q. Winter, as an example.

24 A. Tending with aerial application of a
25 product like Vision would certainly not be workable in

1 the winter. There are stem treatments and other
2 approaches of course that can be carried out quite
3 efficiently in the winter.

4 Q. When you say stem treatments, can you
5 clarify what you mean?

6 A. Things like stem injection
7 treatments.

8 Q. So basically ground spraying of
9 certain products?

10 A. No, this would be a ground treatment
11 of individual stems, can be carried out in winter.

12 Q. Tree by tree?

13 A. Tree by tree.

14 Q. All right.

15 A. Large scale herbicide tending could
16 not be carried out in the winter with any of the
17 technology which exists today.

18 Q. And would the best time for manual
19 release be just after the new foliage has come out?

20 A. Again, I would prefer to define the
21 new foliage coming out. The usual guideline for best
22 time for manual tending would be the usual described
23 rule of thumb which is the exact point at which the
24 broad leaf undesirable reaches full leaf, at the point
25 when the leaf gets as large as it's going to get and

1 not get any larger, that is the best visual guideline
2 to determine the point at which manually severing the
3 stem will result in the lowest amount of complication.

4 Q. Is there a generally accepted period
5 of time when that would apply such as May/June; would
6 that be the range?

7 A. No, this would depend on the
8 phenological progress within a respective season, since
9 it occurs early in a growing season. Spring, across
10 our part of the northern hemisphere, is very difficult
11 to predict and it could occur any time through a period
12 of probably three to five weeks in any year compared to
13 any other year.

14 Q. I just want to clarify another
15 question, but it's a question better directed to the
16 OFIA members. What information has been provided to
17 the Board that indicates that the spraying that has
18 been performed in the area of the undertaking has been
19 undertaken at the right time of year?

20 MR. STANCLIK: A. I can't say that we
21 provided anything specifically to indicate that it's
22 been carried out at the proper time of year, but we
23 have been following the literature that's available and
24 our own experience to make sure that it has been
25 applied at the proper time of the year.

1 Q. The same question with respect to
2 manual release -- sorry, is your answer the same with
3 respect to manual release?

4 A. I would have to say so, yes.

5 MR. BUNCE: A. May I add that on the
6 manual release we have done some ourselves and one of
7 the operational constraints that we've found is that if
8 you do it at the time that Mr. McCormack said, it's
9 very are hard to see the crop trees and you, in many
10 cases, would end up with damage to the crop trees.

11 So from the experience that I've had, we
12 have done it actually in the later in the year when
13 the;leaves have either turned or are off so that you
14 can identify the crop tree.

15 If you do it at the time that Mr.
16 McCormack said, in some cases where the competition is
17 very thick you have a problem with considerable damage
18 to crop trees. So you always have to consider the
19 operational aspects as well as the aspects you're
20 referring to.

21 Q. I would like to refer you to page 116
22 of the evidence. Looking at the bottom of the page of
23 page 116 of Exhibit 1131, over on to page 117 - I
24 believe, Dr. McCormack, this question is best addressed
25 to you - you indicate that:

1 "The concept of yield in term refers to
2 the total..."

3 Over onto page 117:

4 "...amount of harvestable product
5 available at a given time, therefore the
6 growth accumulated over time is yield."

7 Dr. McCormack, would it be fair to say
8 that your definition of harvestable yield depends upon
9 what is considered to be harvestable?

10 DR. McCORMACK: A. Harvestable, yes, but
11 there is an assumption there that one would only
12 harvest what would be usable and, in most cases,
13 distinct from merchantable, that one could not afford
14 to harvest.

15 Q. For the purposes of the evidence
16 you've given here, are you considering only conifers as
17 constituting the harvestable yield?

18 A. I would say, no. Yield here is
19 described in the general sense and refers to any
20 merchantable material that would be thus harvestable
21 and removed from the site for some use.

22 Q. Dr. McCormack, I'd ask you to refer
23 to page 118. Now, looking at the first full paragraph
24 on that page, the second sentence:

25 "Historically specific data have not been

1 compiled formally since herbicide effects
2 are dramatically evident and positive."

3 Now, as I recall it, in your oral
4 evidence you indicated that there had been some
5 difficulty in documenting long-term effects because of
6 the change in personnel on projects over time.

7 Is that what you're referring to there in
8 the first part of that sentence?

9 DR. McCORMACK: A. No, not so. In this
10 case that sentence is distinctly mine and is my best
11 way of expressing somewhat of a professional
12 frustration that has been my experience over many years
13 now talking to various people across northeastern North
14 America with herbicide spray programs to please share
15 any data they have that relate to these benefits from
16 herbicide effects, this dramatically evident and
17 positive response.

18 And to a manager the general response is:
19 What in the world do you need those for, all you have
20 to do is go out and look at the trees. And that in
21 fact is what we've been doing and have been so
22 impressed with the positive responses that we have not
23 bothered to gather the numbers. And that is what is
24 being expressed here.

25 Q. Dr. McCormack, just looking --

1 continuing on page 118:

2 "The number of variables that can affect
3 a spray operation for release or site
4 preparation can include the variety of
5 site conditions."

6 A. Are you referring to a specific point
7 on page 118?

8 Q. I'm trying to take the page as a
9 whole, and I just want to get my confirmation of
10 certain of the variables that I believe you're
11 referring to there.

12 A. Yes. Then, Mr. Castrilli, if you
13 would repeat that again, please. I was trying to find
14 the wording here on the page.

15 Q. Sure. Is one of the variables that
16 can affect a spray operation for site preparation or
17 release the variety of site conditions?

18 A. Certainly.

19 Q. And a variety of vegetation?

20 A. That precisely is why site-specific
21 prescriptions must be developed, yes.

22 Q. Species desired?

23 A. Yes.

24 Q. Time of application in the year?

25 A. Time of application is one of the

1 variables but is not on a priority order of the others
2 you've mentioned thus far.

3 Q. Time of application during the day?

4 A. That is a variable, yes.

5 Q. The variety of spray, what I will
6 call sprays available, and by this I mean aerial,
7 ground, stem injection?

8 A. Generally I think prescriptions are
9 developed where that decision has already been made, so
10 that the prescription applies specifically to the
11 technique which has been selected; in other words, once
12 that decision is made it no longer is a variable.

13 Q. Until that decision is made that's a
14 variable as well?

15 A. It could be where those options are
16 actually valid choices.

17 Q. Application rates?

18 A. Application rates are determined
19 principally by the first three variables you describe
20 relative to species present and characteristics of
21 those species present and how they are developing on
22 the site which relates to the site quality variable
23 which I believe is the first one you mentioned.

24 Q. Sorry, I'm not sure if your answer
25 was a yes or a no to that one, particular

1 qualification.

2 A. I think what I was trying to express
3 is it is a variable but we have pretty much already
4 discussed the site conditions and species conditions
5 which determine that.

6 Q. Droplet size of application?

7 A. Yes.

8 Q. And would it be fair to say, Dr.
9 McCormack, that all of these factors can affect the
10 success of a spray operation?

11 A. They all can, but I would have to
12 point out that there are many inter-relations across
13 these variables, so it's difficult to isolate one of
14 them from several of the others and we have to keep
15 that in mind.

16 Q. So do I understand your testimony
17 that all of these various factors and combinations of
18 factors, if I understood your last response to my
19 question, are matters that can affect a spray
20 operation?

21 A. They are and that is why they are the
22 basis for site-specific prescriptions.

23 Q. Do I understand your testimony as
24 well that the effects of spray operations are not well
25 documented, partly because the results are

1 self-evident?

2 A. The effects are documented at a
3 management level in terms of whether or not
4 silvicultural effectiveness has been achieved, but
5 details on the order of the qualitative reflection of
6 exactly what the success is on the order that might be
7 carried out in a research study are not necessary
8 within a management -- the operational management
9 framework.

10 Q. Without the background information
11 that would result from understanding the impacts of all
12 those variables and factors, how could a forester make
13 a decision about which factors are important?

14 Isn't a forester in a very difficult
15 position to make a decision on how to release a
16 plantation?

17 A. I think not at the present time
18 because of special training which has been carried out
19 to a number of foresters who are -- have been, are or
20 were involved in spray operations and in many cases
21 will some time in the future have that responsibility.

22 There have been numerous intensive
23 workshops and training programs carried out over the
24 last several years to make sure that operational
25 foresters with responsibility in such tending programs

1 have the background information and understanding so
2 they can develop sound prescriptions, administer those
3 prescriptions and supervise the components of the
4 programs and carry them out.

5 Q. Still referring to -- or Continuing
6 with page 118, excuse me. The first three items on
7 that page are reference to various limitations that
8 have effected data gathering in the past with respect
9 to evaluation of spray effectiveness. Is that how I
10 read those first three items?

11 A. They affect the meaning of the data
12 which have been collected and I have to just quickly
13 look through the long one there, No. 2.

14 Part of No. 2 actually relates to some
15 specifics of data collection which sometimes make it
16 difficult to interpret results some time after the data
17 have been collected as opposed to some of the types of
18 delivery capability variables that are referred to in
19 No. 1 or land history, site conditions that are
20 referred to in No. 3.

21 Q. Well, would it be fair to say, Dr.
22 McCormack, just looking at the first three points on
23 page 118, that each one of these are good arguments for
24 justifying the need for better documentation of results
25 of the effectiveness of spray operations?

1 A. I think they document the need for
2 more specific qualifications of studies, research
3 studies and gathering of data on that order of
4 intensity.

5 However, our practice has been, as we
6 have developed these types of data over the last 10 to
7 15 years, is from those develop indicators, guidelines,
8 visual impressions which facilitate the evaluation of
9 such herbicide tending activities on the operational
10 scale, so that an operational forester responsible for
11 carrying out these evaluations has some guidelines that
12 can be more readily used within the operational scene
13 because they are limited in time and resources; thus,
14 things like aerial survey, aerial photography, fairly
15 quick sampling schemes can be used to relate to the
16 more intensively collected research data so that an
17 evaluation can be made that is practical from the
18 standpoint of the operational personnel.

19 Q. Looking at those three points again,
20 Dr. McCormack. Don't these limitations suggest that
21 foresters face a very difficult, if not impossible
22 task, in trying to make the best decision for releasing
23 plantations?

24 Isn't that the true import of those first
25 three points on page 118?

1 A. Well, Mr. Castrilli, I would
2 certainly hope not since I've devoted a large
3 proportion of my professional career over the last 20
4 years trying to train and I believe actually training
5 the professional personnel who carry out these
6 responsibilities so that they are able do it within the
7 operational scene, and have worked with orders,
8 including remote sensing specialists to make these
9 evaluations even to the point that we are currently
10 developing a videotape quick scanning process that can
11 be fed into a computer system to evaluate efficacy of a
12 herbicide treatment.

13 We are truly working on this at the
14 highest possible achievable levels of technology and
15 working with a group of people who are truly
16 professionals specially trained to carry this out.

17 Q. Would you agree with me that it's
18 important to know whether the best decisions about
19 spraying are in fact being made in the Crown forests of
20 Ontario?

21 A. Very definitely.

22 Q. Mr. Bunce, I understand you are a
23 company management forester; is that correct?

24 MR. BUNCE: A. That's correct.

25 Q. And would you agree with me that we

1 must know exactly what the benefits are from spraying
2 before we can justifying expenditures on such programs?

3 A. I'm not sure what you mean by
4 'exactly what the benefits are'.

5 I think that if you -- you can see what
6 the benefits after a spray program by looking at the
7 foliage which has been reduced, you also get to see
8 through the fifth year assessments the stocking that
9 you have, the assessments which show free to grow on
10 those areas. So I think that that gives you some
11 indications of whether you have a success and whether
12 you picked the right prescription or Not.

13 Q. Mr. Bunce, you did a thesis at
14 Lakehead University in 1979; did you not?

15 A. I did an undergraduate thesis when I
16 was at Lakehead University, yes, in my fourth year, in
17 1979.

18 Q. And you concluded that research into
19 the benefits of 2,4-D spraying is essential before any
20 expansion of the program be considered?

21 A. I'm not sure exactly what I
22 concluded. I would have to look at my thesis to see
23 some of the conclusions I have there.

24 Q. Actually, Dr. Bunce, it is referred
25 to in exhibit -- I should say, a summary of your paper

1 is referred to in Exhibit 603B. I have your paper here
2 if you would like to discuss it, just so we can clarify
3 what I understood your position to be in 1979.

4 Would you like to see a copy of it?

5 A. Yes, I would like to see a copy of
6 it.

7 Q. If you want to take a moment to just
8 review it to make sure all the pages are there.

9 MADAM CHAIR: Mr. Castrilli, you said we
10 had a reference to this exhibit?

11 MR. CASTRILLI: Yes, they are at pages
12 268 and 269 of Exhibit 603B.

13 MS. CRONK: What is 603B?

14 MR. CASTRILLI: It is the MNR Panel 12,
15 Volume II.

16 Q. Is it all there?

17 MR. BUNCE: A. As far as I can tell,
18 yes. There are 30 pages or so.

19 MR. CASTRILLI: Madam Chairman, I would
20 like to make this the next exhibit.

21 MADAM CHAIR: That will be Exhibit 1193.

22 MR. CASTRILLI: (handed)

23 MADAM CHAIR: Thank you.

24 ---EXHIBIT NO. 1193: Thesis entitled: Effect of Aerial
25 Applications of 2,4-D on the
Height Growth of Picea Glauca

1 (Moench) Voss and Picea Mariana
2 (Mill.) by Philip M. Bunce,
3 Lakehead University, May,
4 1979.

5 MR. CASTRILLI: Q. Mr. Bunce, perhaps we
6 can go to page 28.

7 Madam Chair, I'm sorry, this is Exhibit
8 1193?

9 MADAM CHAIR: That's right, Mr.
10 Castrilli.

11 MR. CASTRILLI: Q. Beginning at page 28,
12 Mr. Bunce, of what is now Exhibit 1193, you indicate on
13 the only full sentence on that last page:

14 "We must know exactly what these benefits
15 are from spraying before we can justify
16 the expenditures on such programs."

17 What were the concerns that prompted you
18 to draw that conclusion in 1979?

19 MR. BUNCE: A. Well, the thesis that I
20 did at the time was based on the effects of aerial
21 application of 2,4-D on black spruce, and I do believe
22 that at the time what we were trying to do was look at
23 the response of the crop tree rather than the response
24 of the suppressed trees or the vegetation which we are
25 trying to suppress.

We chose height at the time as an

1 indication of whether we would see any success from the
2 spray in decreased height growth of the crop tree,
3 which was the black spruce at the time.

4 From the conclusions of the study that we
5 did, we found that we could not see any significant
6 height difference in the crop trees from that time, and
7 at that time we also gave some recommendations. My
8 meaning at that point was that using the height growth
9 I could not determine that there was a success on the
10 black spruce at that time, and my suggestion was that
11 more research could be done on those things -- on to
12 measuring the crop tree to see what the response was.

13 Since that time, I have noticed through
14 the literature and whatever that height growth was not
15 the best choice. In fact, we should definitely have
16 been looking at the diameter or the total growth of the
17 tree height and diameter, which I think has been done
18 in many cases since that time, and I think the research
19 has been done since that time on those things.

20 Q. So that when -- let's turn to page
21 27. We are looking now at the last paragraph on that
22 page. You state that:

23 "Caution should be taken with some
24 in depth studies on the effects of
25 herbicide release. This research into

1 the benefits of the spray is essential
2 before any expansion of the program is
3 considered."

4 Just continuing, this will take us to the
5 last sentence I read to you first:

6 "The number of years after cut, and the
7 years between sprays should be examined
8 in order to get the greatest benefit from
9 the spray program."

10 So if I understand your testimony, then,
11 the focus of your study was on height growth. And what
12 you have seen change in the research literature since
13 1979 is a -- I think you called it a greater emphasis
14 on volume growth?

15 A. No, what I said was, we used height
16 growth to see if we could determine any significant
17 increase.

18 Since that time, I have learned that
19 height growth is not necessarily the factor which is --
20 which shows up as much when you have a release
21 treatment, that actually diameter growth and height
22 combined, which is actually total volume, is where you
23 see the significant difference, and I do understand
24 that there has been considerable literature on that
25 after.

1 Also, there were other recommendations in
2 there; for example, the areas at that time I think were
3 sprayed in five to seven years after the initial
4 treatment, and since that time -- I think that my
5 recommendation at that time was maybe we should look at
6 some two to three before. And I do believe in many
7 cases now it is standard practice to spray much earlier
8 than five to seven years rather than wait for the
9 competition to totally overtop the crop tree.

10 Q. Let's turn to the abstract page which
11 is the third page in Exhibit 1193 and we are looking at
12 paragraph 3 on that page. Your study on the effects of
13 aerial applications of 2,4-D on height growth of white
14 spruce and black spruce concluded that in the lowland
15 areas you examined, that the growth per cent declined
16 slowly, indicating no benefits in height growth from
17 the release.

18 Sorry, just let me refer to another
19 passage.

20 Actually, I should take you to page 19 of
21 your paper, Exhibit 1193. This is now a section on the
22 upland areas you examined which, as I understand from
23 your paper, had higher site quality to begin with, that
24 while the treated areas did have a higher incremental
25 height increase, the incremental growth began two years

1 before the spraying.

2 Sorry, let me just take you back to the
3 abstract page in the fourth paragraph.

4 "In the upland areas the height growth
5 differences peaked in 1971 and declined
6 slowly thereafter, indicating a slight
7 increase in the height growth from the
8 spray."

9 A. May I note that -- I suppose today
10 that a true researcher would look at my paper and be
11 very skeptical. In fact, as soon as I say that the
12 site quality of one site, which was the treated site,
13 was not the same as the site quality for the
14 non-treated site, it is very difficult for a researcher
15 or a scientist to be able to put a lot of faith into
16 the data that I have.

17 You have to realize that this was an
18 undergraduate thesis and we did not set up an
19 experiment to spray an area and then measure the growth
20 after. What we tried to do in the summer, prior to
21 doing the thesis, was to try and find some areas that
22 had been sprayed and had been treated previously and
23 tried to match the two up and get some information
24 together to do some measurements on it.

25 So just from that fact alone, that one

1 site had better quality than the other, I am sure that
2 research scientists would have difficulty with this,
3 especially when you look at -- as I said earlier, if
4 you go through it, I think the areas were not even
5 necessarily cut in the same time period.

6 So I'm not sure whether -- if I was doing
7 the thesis now, I think it would probably be a graduate
8 thesis at this point, I'm sure that it would be of much
9 better design than it was at that time.

10 Q. Thank you for that. Could I refer
11 you to page 24?

12 A. Certainly.

13 Q. Looking at the bottom of the page, I
14 was interested in your assessment at the bottom of this
15 page on what you believe to be one of the explanations
16 for the poor height growth response, and that's what
17 you are talking about at the bottom of page 24. And
18 you speculate that:

19 "It is possible that competition for
20 water and nutrient is the limiting factor
21 rather than light. The 2,4-D is known to
22 provide top kill, but this may have
23 little effect on decreasing root
24 competition."

25 I will read the rest of the sentence -- I

1 will read the rest of the paragraph and then I want to
2 come back to the sentence I just read.

3 "The alder sprouts quickly after spraying
4 and this could be a stimulant to root
5 growth, thus putting a further strain on
6 the spruce."

7 Just looking back at that reference where
8 you indicate that 2,4-D is known to provide topkill but
9 this may little effect on decreasing root competition,
10 is that an assessment that you still hold today?

11 A. I think that what I still hold today
12 is the sentence before it, which I think is definitely
13 the most important statement there, which says:

14 "It is possible that competition for
15 water and nutrients is the limiting
16 factor rather than for light."

17 I think that's one of the things that we
18 have to think of. So I would have to agree that, yes,
19 you not only have to look at the competition above the
20 ground, but it is very important to know what the
21 competition is below the ground, which are the roots
22 and such.

23 Q. And -- sorry.

24 A. As to the top kill for alders and
25 whatever, I have not had a lot of experience since I

1 have graduated with alder so I can't comment on my --
2 anything other than I noted at that time.

3 Q. I just want to refer you very
4 briefly, Mr. Bunce, to a number of your
5 recommendations. I believe they begin at page 26,
6 No. 2 first:

7 "To spray an area a second time if
8 competition is again hampering the growth
9 of the spruce."

10 Does that in fact happen on sites you now
11 manage?

12 A. That I manage now?

13 Q. Yes.

14 A. In fact, on sites that I manage now
15 we have carried out second spraying; however, not with
16 spruce. If you would note in the case study that we
17 presented, we actually carried out two tending
18 treatments on three of the blocks that we had, one in
19 the third year and one in the fifth year after
20 plantation. However, that was jack pine and not
21 spruce.

22 The area that I manage at this point is
23 very new to mixed spruce and it's predominantly jack
24 pine.

25 Q. I did want to ask you one question

1 about your case study which you discussed on May 16.
2 Did I understand your testimony to be that it was
3 standard practice to aerially spray 2,4-D in the third
4 and fifth year after harvest?

5 A. No, I didn't say that it was standard
6 practice. I said that it is -- on the sites that we
7 were talking, which are very productive jack pine,
8 aspen, upland mixed wood, the prescription is that you
9 probably will need to spray in the third year and again
10 possibly in the fifth year.

11 So that it is an accepted practice, but I
12 wouldn't necessarily say it happens on all occasions.

13 Q. I am just looking -- we are still at
14 page 26 of your paper, Exhibit 1193. Referring to the
15 recommendation, the last recommendation on the page,
16 No. 7:

17 "Use caution and hold back on increases
18 in the spray program until we can answer
19 some of the questions", you raise in
20 your paper,
21 "We should also know exactly what the
22 benefits of spraying are before any
23 increases in the program", presumably you
24 mean are considered.

25 Would that be good advice, Mr. Bunce, in

1 1990 as well as 1979 for the area of the undertaking?

2 A. It may be good advice. I would have
3 to say that I think quite a few of the questions have
4 certainly been answered since that time, and I can
5 still say that we should know what the benefits of the
6 program are, yes. But I believe that some of the
7 recommendations that I have said have been carried out
8 since that time.

9 Q. Okay.

10 MR. CASTRILLI: Madam Chair, this might
11 be an appropriate place for a break, if that's
12 permissible.

13 MADAM CHAIR: All right, Mr. Castrilli.
14 We normally break at ten after ten, but if you are
15 ready --

16 MR. CASTRILLI: I'm sorry, it's ten after
17 ten you break?

18 MADAM CHAIR: That's the pattern we have
19 gotten into.

20 MR. CASTRILLI: Then I am prepared to
21 continue.

22 MADAM CHAIR: All right.

23 MR. CASTRILLI: I thought we normally
24 broke at ten.

25 MADAM CHAIR: All right.

1 MR. CASTRILLI: Q. Dr. McCormack, let's
2 continue with you and I'd refer you to page 119 of
3 Exhibit 1131.

4 On this page, Dr. McCormack, I understand
5 that you have outlined three appraisal points with
6 respect to herbicide treatments. If I can just
7 summarize them without repeating them: Herbicide
8 delivery effectiveness is the first one, efficacy of
9 the treatment in suppressing competing vegetation is
10 the second, and stocking levels and growth responses is
11 the third.

12 And do I understand, Dr. McCormack, from
13 your evidence that it is important information for a
14 forester to have an understanding with respect to each
15 of those points?

16 DR. McCORMACK: A. Yes.

17 Q. It is important information for a
18 forester to have?

19 A. Yes. My answer is yes, recognizing
20 that in effect those three items occur over different
21 time spans. No. 1 is the first to become available,
22 followed by No. 2, and then, obviously from our earlier
23 discussion, No. 3 could extend over a longer period of
24 time depending on the situation.

25 Q. Does the Board have the results of

1 such investigations as part of your evidence for the
2 area of the undertaking?

3 A. I think certainly information
4 relative to items 2 and 3 have been reflected in the
5 evidence which I have presented and in portions of this
6 statement of evidence.

7 Item No. 1 is specific to a given site
8 that has been treated and is basically a mechanical
9 procedure whereby a manager simply makes sure that the
10 applicator did what he or she was supposed to do.

11 Q. Dr. McCormack, so I am clear on your
12 answer. Your answer is: We do have the results of
13 such investigations in your evidence for the area of
14 the undertaking? That would be Ontario.

15 A. They are reflected in the data and
16 information presented here for species which are common
17 to the area of the undertaking.

18 Q. But done in the State of Maine or
19 elsewhere?

20 A. Done in the State of Maine and many
21 other locations, including data from the area of the
22 undertaking.

23 Q. Just continuing with page 119. I
24 asked you a question in our interrogatories, it was
25 question No. 11, page 12 of Exhibit 1192.

1 We asked you to provide an example
2 demonstrating where in Ontario a different spectra of
3 control of target vegetation species had been done and
4 what success, and in your answer you refer us to Figure
5 1 on page 20 -- sorry, page 120 of the statement of
6 evidence and also the case study D, the black spruce
7 Clay Belt management, Abitibi-Price, Iroquois Falls.
8 You indicate:

9 "A success of this approach is
10 illustrated in the fifth year stocking
11 assessment results..." to the case study
12 described -- sorry,
13 "...for the case study area described in
14 the case study."

15 I want to first refer you to Figure 1 on
16 page 120, which is what you referred us to. Now, this
17 is a figure dealing with generalized level of
18 suppression achieved by four different herbicides when
19 applied to five different types of competing
20 vegetation. I believe this is also an overhead of
21 yours.

22 A. This would have been overhead No.

23 28--

24 Q. That's right.

25 A. --in my presentation.

1 Q. There is no material difference
2 between the two, so we will just look at page 120.

3 A. Yes.

4 Q. Can you advise the Board, Dr.
5 McCormack, would the expected level of suppression vary
6 according to the time of year of application?

7 A. In the general sense, the level of
8 efficacy could vary relative to time of application,
9 but within the window of time when operational
10 treatments are carried out, I would not expect a
11 significant difference in the level of suppression to
12 take place.

13 Q. Just looking at page 121 at the
14 bottom -- the last full paragraph on that page, you
15 call it:

16 "A fourth factor, timing (phenological,
17 seasonal and diurnal)..."

18 Is that -- am I pronouncing that
19 correctly, Dr. McCormack?

20 A. Yes.

21 Q. All right.

22 "...provides another manipulative
23 and variable component in actually
24 carrying out an operational treatment."

25 Now, I took that sentence to mean that --

1 that fourth factor to mean that one would expect the
2 level of suppression to vary according to the time of
3 year of application.

4 Now, as I understand your elaboration or
5 your clarification on that, your answer is yes in a
6 general sense, but no if we're talking about the
7 expected window of application time; is that correct?

8 A. That's correct. By window I mean the
9 time during which operational treatments are normally
10 carried out which determine the first two parts in that
11 parenthetical entry in the sentence you've just
12 referred to on page 122, meaning the phenological and
13 seasonal.

14 Mr. Castrilli, when you made reference to
15 seasonal timing, I assumed that did not include the
16 third factor there which is diurnal timing. If we want
17 to discuss diurnal timing, I consider that a separate
18 matter of timing apart from the seasonal.

19 Q. Well, I'm just trying to understand
20 how one should understand Figure 1.

21 A. Mm-hmm.

22 Q. Is the time of application -- the
23 application time the same or meant to be the same for
24 each of these, I guess it's four herbicides?

25 A. Well, perhaps I can assist the Board

1 in elaborating on this, that the assumption here is
2 that each respective herbicide is applied in a timing
3 and manner that is the accepted way for that herbicide.

4 We are assuming proper use in the
5 reflection of relative efficacies of these four
6 herbicides. But by timing that refers, as I said a few
7 minutes ago, to the phenological and seasonal aspects
8 of timing, not necessarily diurnal.

9 Q. Well, in focusing on Figure 1, there
10 is no indication over what time of year the spray is
11 applied, so I'm simply asking you -- perhaps the
12 easiest thing would be: Can you simply advise the
13 Board what is the appropriate application time you
14 believe to be the case for each of those herbicides?
15 Just give us a month to month for each one of them?

16 A. I alluded to that in my earlier
17 answer, first by saying these would be the results
18 expected during the normal operational window of spray
19 application. Depending on the specific location, use
20 of these chemicals could take place - I will mention
21 months, but with the qualifier that the phenological
22 conditions can vary widely across sites and what might
23 be a phenological condition occurring in late July in
24 one management unit might be totally different in
25 another management unit in another location within the

1 area of the undertaking -- with that as a qualifier, I
2 would say that these practices could take place any
3 time from late July through September depending on
4 specific conditions and recognizing that one year
5 opposed to another year there might be conditions that
6 would allow a manager to carry out effective operations
7 outside that time span I have just described and with
8 the additional point, that if it is a site preparation
9 treatment as opposed to a release, or what I call
10 pre-release treatment, the window could be somewhat
11 wider allowing an earlier application, meaning before
12 late July.

13 Q. So that if I understand your answer,
14 Dr. McCormack, for all four of these herbicides, given
15 the qualifications you have just provided to the Board,
16 if we wanted to put a time line -- if I could put it
17 that way -- on this figure, would we still be accurate
18 or would this figure still be accurate and still look
19 the same if we wrote at the bottom of the page July
20 through September?

21 A. It would be a similar -- I will put
22 it this way, the position of the curves would be
23 relatively the same, yes.

24 MR. CASTRILLI: Madam Chair, I am
25 wondering if you might indulge me now, since I am at a

1 point where I am going to begin a different area of
2 cross.

3 MADAM CHAIR: Thank you, Mr. Castrilli.

4 MR. CASTRILLI: Thank you.

5 MADAM CHAIR: The Board will take a
6 20-minute break.

7 ---Recess taken at 10:08 a.m.

8 ---On resuming at 10:30 a.m.

9 MADAM CHAIR: Please be seated.

10 Mr. Castrilli?

11 MR. CASTRILLI: Thank you.

12 Q. Mr. McCormack, can I ask you to
13 return to page 120 of Exhibit 1131. Now, I am just
14 wondering if you could advise the Board what diurnal
15 restrictions apply to each of the four herbicides that
16 are listed on that page?

17 DR. MCCORMACK: The diurnal conditions
18 relate principally to factors such as relative
19 humidity, temperature and the changing of such
20 variables during the day. So again, generally the
21 relationship applies across any spray application of
22 herbicides that one has conditions in the morning where
23 you are into a warming curve reducing relative humidity
24 and the temperature profile that is different from that
25 temperature profile that exists in the evening, as well

1 in the evening one is approaching or going through a
2 rising relative humidity and decreasing temperature and
3 it's conditions such as that that can modify, though in
4 a subtle way, efficacy because of the way droplets of
5 spray -- of the herbicide spray impact the foliage of
6 the target vegetation and either dry rapidly or dry
7 slowly or those types of conditions that occur, those
8 conditions change as one goes through a typical day.

9 Q. Just focusing on, for example,
10 glyphosate or 2,4-D, would the same diurnal
11 restrictions apply to those?

12 A. They would, but it would be I think a
13 little more evident with glyphosate because of the
14 superior drying conditions that would occur in the
15 morning versus evening, and that is somewhat
16 advantageous with glyphosate.

17 Q. And the phenological stage, which I
18 understand is stage of development, generally?

19 A. Stage of development of...?

20 Q. Of the grasses, raspberries, soft
21 maple, birch, aspen.

22 A. Of the target vegetation.

23 Q. Yes, could you advise the Board what
24 phenological stage of development we are looking at for
25 Figure 1 for the five items listed on the bottom,

1 grasses, raspberries, soft maple, birch and aspen?

2 A. The phenological condition would be
3 that which is desirable during that window I have
4 already described when a herbicide might be applied,
5 and with all the species or species groups designated
6 across the bottom of Figure 1, it would mean foliage
7 present.

8 Q. That's for all five of them?

9 A. In the cases of the herbicides listed
10 here and within a framework of a typical operational
11 herbicide tending activity, there would be foliage
12 present and functional in an adequate quantity to allow
13 translocation of the applied active ingredient to take
14 place within target vegetation. That is the basic
15 condition which must be satisfied.

16 In the cases of some species, raspberry,
17 aspen as examples here, it is important to have
18 sufficient foliage present and functional but not
19 necessary to have all of them and by this I mean, as we
20 enter into the autumn season and we start to see leaf
21 colour that is typical of the autumn season and some
22 leaf loss, even if there has been some leaf loss, if
23 there are sufficient leaves present and functional a
24 successful herbicide treatment can be carried out.

25 Q. So if I understand your testimony,

1 Dr. McCormack, the phenological stage would not be the
2 same in all respects for grasses, raspberries, soft
3 maple, birch and aspen; the bottom line would be that
4 there has to be some foliage present but there may be
5 differences above and beyond that depending upon which
6 one of these we're speaking of; is that a fair
7 statement?

8 A. Yes, and depending upon which plant
9 characteristics one uses as a guideline to determine
10 phenological condition. For example, another
11 characteristic that could be observed, that I often
12 recommend to operational people because it's easy to
13 observe, is the progression of fruit development and
14 ripening on raspberry, that that is easy to observe,
15 especially where raspberries exist along the side of a
16 road, and if one is a raspberry fruit watcher, as I am,
17 you reach a point where the fruit reached the maximum
18 stage of ripeness and actually drop from their
19 mountings and fall on the side of the road.

20 At that point you can actually pinpoint
21 on a calendar or record book a condition that is
22 observable that relates to when is a very good time in
23 terms of treating a good bit of the vegetation that
24 would be considered target vegetation in the area of
25 the undertaking.

1 MR. TOMCHIK: A. If I could be a bit of
2 assistance, I think you have been talking generally
3 with the foliar applied herbicides or foliar applied
4 applications.

5 DR. McCORMACK: A. Correct. And Mr.
6 Tomchik alludes to a qualifier here. In the case of
7 one of the four herbicides in Figure 1, and that would
8 be hexazinone which has some root uptake capability,
9 thus, the timing could be different in the case of
10 hexazinone, but when one considers the foliar activity
11 of that herbicide, then it is in line with the others.

12 So there are some options with hexazinone
13 that are a little different, but one is less concerned
14 with phenological condition when you are considering
15 root uptake capability.

16 Q. Gentlemen, can I ask you to turn to
17 page 118. Mr. Stanclik, excuse me, has your experience
18 been that herbicide effects are dramatically evident
19 and positive in all cases?

20 MR. STANCLIK: A. In my experience they
21 have been very effective in controlling the vegetation
22 they are designed to control. We have had instances
23 where, for known reasons, they have not been effective
24 and subsequent to that we have made adjustments to
25 ensure that the next time that situation occurred --

1 the next time that those conditions existed that the
2 prescription would be adjusted to account for that.

3 Q. Are there operational prescriptions
4 for Ontario Industry -- your Industry?

5 A. Standard prescriptions across the
6 profitable? No. Every prescription is site-specific,
7 as we discussed earlier.

8 Q. Page 122, Dr. McCormack. This figure
9 actually listed on page 122 doesn't have a title but,
10 as I understand it, it shows total spray volume,
11 particle size of spray and amount or quantity of
12 herbicide product; is that correct, Dr. McCormack?

13 DR. McCORMACK: A. Yes, Mr. Castrilli.
14 Actually I think inadvertently the first portion of the
15 top line is in fact a title but is also part of the
16 caption--

17 Q. I see.

18 A. --that maybe should have occurred as
19 a title: Three-Dimensional Diagram of Three Major
20 Components of a Herbicide Application, and you have
21 just outlined those three components as they are
22 described in the figure.

23 Q. Thank you. Does this figure, Figure
24 2, show effects?

25 A. No, this only shows three of the

1 major dimensions or components, if you will, of the
2 herbicide application prescription that would be
3 applied. The effects would come after a point within
4 this cube is determined, applied to the target, and
5 then a valuation of the efficacy had been made.

6 Q. Page 128, Table 8.

7 MR. CASTRILLI: And, Madam Chair, I'm
8 sure you're aware that Table 8 was amended. There was
9 actually an insert for that page.

10 MADAM CHAIR: Yes, we are, Mr. Castrilli.

11 MR. CASTRILLI: And I'm looking at the
12 amendment.

13 Q. Dr. McCormack, we asked an
14 interrogatory in connection with this table, it's on
15 page 14 of Exhibit 1192 and it's Question 13. Do you
16 have the page?

17 DR. MCCORMACK: a. I have Question 13,
18 the answer to which extends over several pages.

19 Q. Yes, that's right. We asked you in
20 this interrogatory:

21 "What was the total volume of all species
22 of trees on the control and spray areas?"

23 And as you have just identified, your
24 answer takes up several pages. I'd like to go through
25 the answer to clarify my understanding of your

1 response.

2 You have divided your answer by study and
3 I would like to go through each of the itemized
4 references. To begin with, Item No. 1, which is the
5 Roe 1951 study or reference. Can you confirm for me,
6 Dr. McCormack, that the Roe study shows that the total
7 volume of all tree species is higher on the no release
8 area than on the partial release or full release areas?

9 A. You are referring to the 31.8 value
10 in the total column opposite the no release. Yes.

11 Q. Yes. And that is also true for the
12 1931 study as well, or I guess it's the 1931 period?

13 A. 1931 were data for the same stands in
14 1931, so in fact there was a higher volume of 7.9
15 versus 2.8 and 1.7 on the two released areas, and that
16 shows early in the study, the 1949 data are late in the
17 study. So in fact part of that increased volume
18 reflects that there was much more volume present on the
19 unreleased stand before the study was carried out.

20 So if one were to look at volume change
21 over that time period there has been a greater
22 proportionally increasing volume on the two released
23 sites as compared to the unreleased.

24 Q. Looking at the -- let's take the next
25 three together. It's Stone which is Item No. 2, Wilde

1 Item No. 3, and Wittenkamp which is Item No. 4. These
2 three studies combined do not show the total volume of
3 all species; is that correct?

4 A. Those data were not readily
5 available. When the studies came over those numbers
6 were -- those numbers were essentially out of reach.
7 The percentage gains reflected here are based on the
8 numbers which I have provided that do come from the
9 study.

10 Q. Right. And that is with respect to
11 the red pine plantation results only; is that correct?

12 A. These three studies, which would be
13 the second, third and forth ones listed in Table 8, are
14 for red pine plantation.

15 Q. And with respect to the E.B. Eddy
16 case study which is Item No. (5) - it's found, Madam
17 Chair, at page 15 of Exhibit 1192 - Dr. McCormack, this
18 case study does not indicate the total volume of all
19 species but only the volume of the jack pine generally;
20 is that correct?

21 A. I think that's correct, and I don't
22 have that case study before me, but I did note in the
23 answer to the interrogatory that the basic numbers
24 utilized here came from Table 3 on page 30, at least
25 page 30 of the copy of the case study I had available

1 at the time.

2 Q. That is fine, thank you.

3 With respect to the Delisle study which
4 is a 1989 jack pine plantation investigation - that is
5 Item No. 6, Madam Chair, on page 15 of Exhibit 1192 -
6 Dr. McCormack, can you confirm for me that this study
7 does not indicate the volume of other species on the
8 site besides jack pine?

9 A. No, the only measurements available
10 and those evaluated were for what were considered to be
11 potential crop trees (B) jack pine in a plantation.

12 Q. That's fine, thank you. And moving
13 down that page to -- I think we will take the next two
14 together, if we could, that's Item No. 7, I guess it's
15 New Brunswick Department of Natural Resources study,
16 and the Quebec and Ontario Paper Co. Ltd. jack pine
17 study in Ontario.

18 Can you confirm for me, Dr. McCormack,
19 that the data in these two studies are for the target
20 species only; again that's the jack pine?

21 A. I would clarify that NB DNR refers to
22 what was at that time the Department of Natural
23 Resources in the Province of New Brunswick.

24 Q. That is fine. Your answer to my
25 question is -- sorry, do you want me to repeat the

1 question, or did you get it?

2 A. I'm looking, since reference is made
3 here to Table A on the NB DNR study, I was looking for
4 Table A just to review for my own reassurance that
5 those numbers were not in the Table A that was filed
6 with the answers to the interrogatory.

7 And from that, my answer is yes, they
8 only measured potential crop trees which also in this
9 case were jack pine in the plantation.

10 Q. Moving on to the next page, page 16
11 of Exhibit 1192, again I'd like to take two studies
12 together or two references together at the same time to
13 shorten this up, if we can, Items 9 and 10.

14 They are both New Brunswick Department of
15 Natural Resources studies with respect to black spruce,
16 Table A to 1988, Table B refers to 1989.

17 Can you confirm for me, Dr. McCormack,
18 that the data are for the planted species only; that is
19 black spruce in this case?

20 A. Yes, that's correct, the data
21 gathered were for crop tree growth responses only.

22 Q. And if we just move down page 16 of
23 Exhibit 1192 - I don't want to take too many of these
24 at a time, it will become too cumbersome - just to Item
25 No. 12 which is Abitibi-Price and Item No. 13, the Pitt

1 study, can you confirm for me that the data in these
2 two studies do not include volume or height information
3 on other species other than the planted species?

4 A. With the exception that there are
5 some data in Table C for the Pitt study that relate to
6 the percentage cover of weeds on the sites, which gives
7 an indication of the amount of competing vegetation
8 there.

9 I would point out in that respect that
10 where these are plantations and these are young
11 plantations, that the predominant cover that could have
12 been measured in this case are reflected in Mr. Pitt's
13 table, those being raspberry, fire weed and grasses,
14 which of course are a little more difficult to measure
15 in terms of size and the trees.

16 So where these are early studies, the
17 major measure of success or level of success of such a
18 treatment is in crop tree response, rather than
19 directly the condition of the competing vegetation
20 because the ultimate purpose here is to gain that crop
21 tree response.

22 Q. Looking at reference 14 on page 17,
23 can you confirm for me that the data in these studies
24 do not include volume or height information on other
25 species than planted species?

1 A. You are referring to Campbell's data
2 on white spruce in Ontario?

3 Q. Yes, that's the Campbell and
4 Deschamps, 1987 papers?

5 A. Yes. In this case, Dr. Campbell
6 indicated to me that he only measured within a series
7 of plots. The tallest potential crop tree in each plot
8 was his basis for measurement.

9 Q. So the answer to my question is yes?

10 A. The answer is yes because, in fact,
11 by definition there was nothing else to be measured.

12 Q. And the -- we are down to reference
13 15, the Lees' study. I will do them one at a time.
14 The Lee study, which is reference 15 at page 17 of
15 Exhibit 1192. Do you agree the data in that study does
16 not include volume or height information on any species
17 other than the planted species?

18 A. In that case, the publication was
19 submitted - four pages of the publication - and it
20 makes reference to Tables 9 to 12 which I thought I
21 could refer to, but I don't have them with me.

22 I guess I would have to just assume that
23 that is a qualification. I guess from the information
24 before me I assume -- to the best of my ability at this
25 time the answer is yes.

1 Q. Okay. And reference 17, is that
2 Jaciw? How would you pronounce it?

3 A. I'm afraid I can't help you with that
4 one.

5 DEAN CARROW: Jaciw

6 MR. CASTRILLI: Q. Reference 17.

7 MR. MCCORMACK: A. Yes.

8 Q. Can you confirm for me that reference
9 17 does not include any volume or height information on
10 other species other than planted species?

11 A. That is correct. This is height
12 growth only for the evaluated crop trees.

13 Q. And then with respect to study
14 references No. 11, which is Henderson and reference No.
15 16, Lanteigne, we have no data whatsoever; is that
16 right?

17 A. Okay. Lanteigne, which is your No.
18 16--

19 Q. Yes, that's correct.

20 A. And Henderson, I have lost track of
21 that one.

22 Q. The reference is at page 16 of
23 Exhibit 1192.

24 A. At any rate, each of those was a
25 Masters thesis carried out at the University of New

1 Brunswick, and at the time the table was compiled, I
2 did not have access to those numbers and, consequently,
3 I only used what was available and that was restricted
4 to crop tree data.

5 Q. Thank you. I think we have covered
6 all 17 of them. Would it be fair to say, Dr.
7 Henderson, that the --

8 MS. CRONK: Dr. McCormack.

9 MR. CASTRILLI: I'm sorry. In another
10 hearing I am involved in I have been conferring and
11 withdrawing Ph.D degrees and in this hearing I seem to
12 be changing peoples' names. I trust you will forgive
13 me --

14 MS. CRONK: Well, don't try it here.

15 MR. CASTRILLI: Q. With respect to this
16 interrogatory question which deals with all 17 of these
17 references, would it be fair to say, Dr. McCormack,
18 that it would appear that the tending may reduce the
19 total volume production of a site, given the
20 information we have?

21 DR. MCCORMACK: A. I'd say definitely
22 not based on the information we have.

23 Q. What information do we have that even
24 deals with volume apart from the Roe study?

25 A. Well, in fact where most of these are

1 young plantations, and I would specify that these would
2 be, for the most part those with only a few years of
3 evaluation, definitely the jack pine in Quebec, the
4 jack pine data from New Brunswick from NB DNR.

5 Q. Dr. McCormack, I'm sorry, I wasn't
6 clear in my question. Let me restate it for you before
7 you respond.

8 A. Okay.

9 Q. Now, the question I meant to ask was
10 that, is it fair to say that the tending reduces the
11 total volume of the site, and when I say total volume I
12 mean what you call a crop tree and what other trees
13 might also have been on the site?

14 A. Well, it's certainly a possibility
15 that the total volume on the site in that first year
16 after treatment in these cases, where most of these are
17 new, young plantations, there would be an initial
18 reduction because that would have been the intention of
19 the tending treatment.

20 However, in young plantations of this
21 type shortly after, all the comparisons with these
22 types of species with which I am familiar, result in a
23 rather distinct increase in volume on the tended areas
24 as compared to the untended.

25 Q. The only data we have in response to

1 question 13, which deals with both the crop tree
2 species and other species, which is the Roe study, in
3 fact the opposite was the case; wasn't it.

4 We in fact have more on the no release
5 portion of the test block than we have on the partial
6 or the full?

7 A. No. I guess, Mr. Castrilli, if I
8 could go back to some of the examples here in the table
9 where I was specifying some, some of the best examples
10 of this would be the NB DNR studies, the data which
11 were taken from Doug Pitts study which was published in
12 1989, that one is the white spruce in New Brunswick,
13 that these are all young plantations where the other
14 vegetation that would have been high enough to measure
15 was principally at that time of measurement, in the
16 early stages of the plantation, raspberry and fire
17 weed.

18 It has not been productive nor practical
19 to include the volumes of those species in this type of
20 plot work. You can appreciate the difficulty of all
21 the small stems.

22 Q. Yes, but working with the data we do
23 have, we don't have any volume data even on those
24 particular reference studies. The only volume data,
25 when I say volume datae I mean complete volume data of

1 both the crop tree and what you call non-crop tree,
2 there isn't data on 16 of the 17 references except for
3 Roe, and in the Roe study we have volume data which
4 indicates at the end of the day the total volume is
5 less on the treated areas than on the untreated areas;
6 isn't that right?

7 A. No, that is not the way I understood
8 it in looking at the numbers which were available and
9 one looks at comparative growth rate.

10 My point here is that in terms of
11 measurable material at the time these measurements were
12 made in these early stages of development plantation
13 studies, there was no significant volume of those other
14 species to measure. They were either too low or too
15 small at that time because we are -- they were,
16 meaning the people who measured these plots, dealing
17 with plantations that were in very early stages of
18 development.

19 Q. Now, we asked you a further question
20 of this type in relation to Table 9 which is at page
21 130, page 130 of your evidence.

22 MR. CASTRILLI: Madam Chair, that's
23 interrogatory question 14 at page 27 of Exhibit 1192
24 and it's in connection with Table 30 -- which is Table
25 9 which is at page 130 of Exhibit 1131.

1 Q. We asked you:

2 "What was the total volume of all species
3 of trees on the controlled and sprayed
4 areas."

5 Your answer is found at the bottom of
6 page 27. And can you confirm for me, Dr. McCormack,
7 that the data does not include -- does not show the
8 volume of all species other than the crop tree species?

9 DR. MCCORMACK: A. Sure, it was only in
10 the crop trees because, again, that was the principal
11 measure of whether or not, from an operational and
12 silvicultural standpoint, the treatment had been
13 effective and the focus of concern on the part of the
14 manager is on the health, vigor and response of the
15 crop trees.

16 Q. And moving ahead to question 15 of
17 Exhibit 1192, it is on page 28.

18 MS. CRONK: I'm sorry, what question?

19 MR. CASTRILLI: It's question 15. And,
20 Madam Chair, this is in connection with page 132 of
21 Exhibit 1131. There should be a correction in the
22 interrogatory identification, it should be a reference
23 to Table 10 at page 132, not Table 11.

24 Q. We again asked you, Dr. McCormack:
25 "What was the total volume of all..."

1 trees -- sorry,

2 "What was the total volume of all species
3 of tree on the control and sprayed
4 areas."

5 You provided us in your answer with a
6 series of attachments from MacLean and Morgan study of
7 1983.

8 And would you agree with me, Dr.
9 McCormack, that the total volume of all species is not
10 indicated in the response?

11 DR. MCCORMACK: A. Okay. The figures in
12 Table 10 on page 132 are a summary of what are
13 represented in MacLean and Morgan's tables submitted in
14 the answer to the interrogatory.

15 And in terms of actual volume
16 calculations, no, but in Table 1 from MacLean and
17 Morgan on the right-hand end, one can envisage the
18 conditions on the released and unreleased plots by
19 looking at per cent basal area where there were
20 measurable trees present.

21 So one can at least get an idea of the
22 proportion of stems that were large enough to
23 contribute to basal area measurements, meaning 4.5 feet
24 above the ground, so you can see the presence of pin
25 cherry, white birch, mountain ash in a few cases. But,

1 again, the focus was on what would be considered the
2 merchantable trees only.

3 Q. Just for clarification sake, Dr.
4 McCormack, let me refer to Table 1. It's on page 29 of
5 Exhibit 1192; is that correct?

6 A. My set does not have your page
7 numbers on it, but it would be the first page
8 immediately following the specific answer to the
9 interrogatory. It is Table 1 from MacLean and Morgan
10 and that title is Mensurational Characteristics in 1981
11 and Original Treatments, et cetera, Green River, New
12 Brunswick.

13 Q. That's the correct page.

14 MR. MARTEL: Is it possible to measure?
15 If your purpose is to knock back certain vegetation and
16 you do the application and it's successful, could you
17 measure the volume that's not there?

18 DR. McCORMACK: Well, Mr. Martel --

19 MR. MARTEL: I mean, that's what we are
20 getting at really. There are five missing.

21 DR. McCORMACK: My point in discussing
22 young plantations, which make up a large portion of
23 Table 8, is that the purpose of the treatment was to
24 reduce those and at the time of measurement they had
25 not recovered to a height that there was anything there

1 to measure, exactly.

2 MR. MARTEL: Thank you.

3 MR. CASTRILLI: Q. For clarification
4 sake, Dr. McCormack. Basal area is not equal to
5 volume; is it?

6 DR. MCCORMACK: A. Basal area is not
7 equal to volume, but it is principal component in a
8 volume calculation and is at least a relatively direct
9 indication of the proportional amount of stems standing
10 on a site.

11 Q. Can you draw conclusions regarding
12 total volume on the basis of the basal area alone?

13 A. In some cases one can at least
14 estimate proportional volumes based on basal area
15 because it is a principal component of any volume
16 calculation.

17 Q. It's a component, but it is not the
18 whole story; is that right?

19 A. No, but it is probably the most
20 important. That's why we have our concern over radial
21 growth. In effect, if you can envision a tree as a
22 cone and you go back to the basic calculation of the
23 volume of a cone, the cross-sectional area of that cone
24 is a major part of that equation or formula and basal
25 area represents, for all practical purposes, the basal

1 area of the cone which composes the volume of the tree.

2 Q. Is it possible, Dr. McCormack, that
3 we could be adversely impacting total volume of all
4 species by trying to increase the volume of softwoods?

5 A. That question is -- can only be
6 addressed indirectly because it's impossible on a given
7 site to make both comparisons at once because by
8 definition of treatment we have reduced the proportion
9 of some of the species present.

10 However, forestry literature back over
11 the centuries indicate that well organized and with
12 good site occupation softwood stands consistently
13 produce more volume than mixed wood stands or hardwood
14 stems -- hardwood stands.

15 Thus, where we are dealing with softwoods
16 in this case, I would project that we would get more
17 volume per unit of land area from a stand that was
18 predominantly softwood than with the other
19 alternatives. Consequently, my answer to that is a
20 qualified no.

21 Q. A qualified no. We don't really have
22 the data before this Board to make a determination, do
23 we, certainly not on the basis of Tables 8, 9 and 10
24 and the material arising from it?

25 A. We don't have actual numbers, but

1 within the science of forestry over the years there
2 have been these consistent relationships which have
3 been observed and that was the basis for my preceding
4 answer.

5 Q. That's fine. To continue with you, I
6 would like to refer you to page 133 of Exhibit 1131
7 and we are referring to the last full paragraph on that
8 page. Let's focus on the first. I believe you are
9 referring on this page to study that release -- or
10 evaluate the release of balsam from hardwoods in New
11 Brunswick; is that correct?

12 A. This is the MacLean and Morgan study
13 of Green River, New Brunswick.

14 Q. I will direct this question to any of
15 the OFIA members on the panel.

16 Mr. Stanclik, does your company plan to
17 release balsam fir from hardwoods?

18 MR. STANCLIK: A. No, we don't.

19 Q. Mr. Smith, does your company plan to
20 release balsam fir from hardwoods?

21 MR. SMITH: A. No, sir.

22 Q. Mr. Bunce?

23 MR. BUNCE: A. We don't necessarily plan
24 to release balsam fir from hardwoods; however, balsam
25 fir may be released when we are releasing spruce or

1 jack pine during the course of our treatments.

2 Q. Mr. Ferguson.

3 MR. FERGUSON: A. My response would be
4 similar to Mr. Bunce's. We don't manage directly for
5 balsam fir; however, it does appear as incidental
6 species in our other conifer areas and may be released
7 during release of jack pine or black spruce.

8 Q. Mr. Tomchick?

9 MR. TOMCHICK: A. My answer would be
10 similar to Mr. Bunce and Mr. Ferguson in that if balsam
11 is a species in association with the spruce or pine
12 that we were releasing, that we would be releasing the
13 balsam fir as well.

14 DR. McCORMACK: A. If I may, Madam
15 Chair, to assist in the understanding of why this
16 statement on balsam fir is included.

17 MADAM CHAIR: Yes, Dr. McCormack.

18 DR. McCORMACK: That in our work with
19 these short-needle conifer species, it has been our
20 observation that responses of white spruce are very
21 similar to balsam fir. Consequently, this is an
22 indication of what one could expect in the way of
23 response of white spruce to similar treatments.

24 MR. CASTRILLI: Q. Moving on to page 134
25 of the Panel 7 evidence. Dr. McCormack, here you also

1 refer to a study by Lehela, which also released or
2 evaluated the release of balsam fir from hardwoods; is
3 that right?

4 DR. McCORMACK: A. Actually, Peralá's
5 paper was delivered in a symposium --

6 Q. I'm sorry, the one at the top of the
7 page?

8 A. Oh, Lehela. I'm sorry, I
9 misunderstood.

10 Q. I am just going to repeat my
11 question. That's a study that also released or
12 evaluated the release of balsam fir from hardwoods; is
13 that correct?

14 A. That's correct.

15 Q. I believe we asked you an
16 interrogatory in connection with that study found at --
17 it is interrogatory question No. 16, it is found at
18 page 31 of Exhibit 1192.

19 A. I have question 16.

20 Q. We asked you:

21 "How much balsam fir release occurs in
22 the area of the undertaking."

23 And the answer that was provided is:

24 "Balsam fir is released as a component of
25 other working groups and white spruce

1 response are considered similar to balsam
2 fir."

3 It is essentially what you have just told
4 us on the record.

5 A. I was going to say, I think that
6 pretty well summarizes what the OFIA members and my
7 comment regarding white spruce actually on that page.

8 Q. Now, in the answer that was provided
9 and also by the oral responses of the OFIA panel
10 members, would it be fair to say that very little
11 balsam fir is released in the area of the undertaking
12 deliberately as opposed to incidentally?

13 MR. STANCLIK: A. That's fair to say.
14 In my own area, typically balsam fir composes about
15 four per cent of the trees within the blocks that we
16 release.

17 MR. FERGUSON: A. If I could add to
18 that. The provision within the groundrules of the
19 English River Forest where I am involved, discourages
20 the regeneration of balsam fir to begin with.

21 The maximum component allowable in the
22 stocking standard -- or the stocking component on the
23 fifth-year stocking is only 10 per cent of balsam fir
24 fir. For that reason, there is very little balsam fir
25 present on the site being considered in release.

1 Q. Will there be a concern in attempting
2 to deliberately release substantial quantities of
3 balsam fir in this province?

4 MR. TOMCHICK: A. Excuse me, could you
5 repeat that again?

6 Q. Yes. Would there be a concern about
7 deliberately attempting to release substantial
8 quantities of balsam fir in this province? Let's keep
9 it to the area of the undertaking.

10 A. Concern by whom?

11 Q. Well, is the balsam fir a preferred
12 species desired by the spruce budworm?

13 Perhaps Dr. Carrow can help us.

14 DEAN CARROW: Yes, it is certainly a
15 vulnerable -- quite a vulnerable species to spruce
16 budworm.

17 Q. Let's move on to page 136 -- sorry, I
18 meant to say page 138. Looking at the bottom of the
19 page, Dr. McCormack, I believe you were indicating that
20 the results of herbicide spraying must be visualized
21 within the framework of increased numbers of crop trees
22 per hectare resulting from herbicide treatment.

23 Would it be fair to say, Dr. McCormack,
24 that if you are increasing the number of - in this case
25 I gather its spruce and fir trees - you must be

1 reducing the number of other trees?

2 DR. McCORMACK: A. You would be
3 decreasing the biomass of the other species, but I'm
4 not prepared to address the question regarding the
5 numbers, numbers of stems. I can't answer that, but in
6 terms of biomass, the total amount of vegetation
7 present, there would be a reduction in the other
8 species.

9 Q. Moving on to page 142, this is Figure
10 7, Dr. McCormack, we asked the question:

11 "What yields does the Industry expect in
12 Ontario?"

13 And I will just read the answer into the
14 record:

15 "Figure 7 indicates the relative gains
16 possible when the silvicultural practices
17 as described in Figure 7 are employed."

18 MS. CRONK: Sorry, what are you reading
19 from, please?

20 MR. CASTRILLI: The interrogatory answer
21 which is page 32 of Exhibit 1192. It's Question 17.

22 MS. CRONK: 17, thank you.

23 MR. CASTRILLI: I will begin again.

24 "Figure 7 indicates the relative gains
25 possible when the silvicultural practices

1 described in Figure 7 are employed. The
2 Figure is not specific to any targeted
3 yield objectives. Yield objectives
4 vary from company to company. Within
5 each company and from company to company
6 a range of expected yields can exist,
7 depending on such factors as site
8 type, species composition, stocking
9 levels, product goals, available
10 resources, etc. The yield objectives of
11 any particular company are based upon
12 proprietary information and data and for
13 this reason are not available to the
14 OFIA/OLMA."

15 Q. Now, Dr. McCormack, just looking at
16 Figure 7 on page 142, and we are looking here at the
17 portion of that graph that would include genetics - I
18 think when you were describing your overhead you may
19 have identified it by a number - in any event, I will
20 just simply call it curve No. 4, if we might.

21 Now, in Figure 7 you indicate a yield of
22 up to 71 cords per acre. Mr. Stanclik, do you expect
23 such yields in Ontario?

24 MR. STANCLIK: A. In my area I certainly
25 do not expect that much, no.

1 Q. Mr. Smith?

2 MR. SMITH: A. In our area we would
3 anticipate with genetic improvement that we could
4 conceivably reach between 50 and 71.

5 Q. 50 and 71?

6 A. Right.

7 Q. Mr. Bunce?

8 MR. BUNCE: A. I'm not sure that I could
9 give you a figure of 71, however, in the area I would
10 be willing to say that the same type of curves -- the
11 curves may be somewhat different, but the same curves
12 would be there, whether it would be lower than 71 - I
13 would anticipate it would be - but the same trend or
14 the curve from my area would be somewhat similar.

15 So the difference between the planting
16 and genetics would -- the curve may be the same, but
17 probably not 71.

18 Q. I'm sorry, I missed the last part of
19 your answer.

20 A. It probably would not -- I can't say
21 that we would get areas that had 71 cords per acre.

22 Q. Mr. Ferguson?

23 MR. FERGUSON: A. Well, we certainly
24 haven't achieved those levels to date and now looking
25 at the natural forest, I guess basically we are working

1 now with the no silviculture option.

2 At the time the forest we're harvesting
3 now was regenerated, it's difficult to say if we will
4 actually achieve the 71. I can certainly see where the
5 level of management which is indicated in this Figure 7
6 would substantially increase the yields over time.

7 Q. And Mr. Tomchick?

8 MR. TOMCHIK: A. I was busily trying to
9 convert the cords per acre back to units per hectare
10 here.

11 Q. I'm sorry, so was I. Take a moment,
12 if you like.

13 A. No, we would -- in the projections
14 that we routinely use we certainly do not use 71 cords
15 per acre on most sites at rotation age 40, however, we
16 do base yield predictions on silvicultural
17 prescriptions which would indicate that we do expect
18 increased volumes on areas which do receive, for
19 example, planting plus herbicides.

20 We haven't taken into consideration
21 pre-commercial thinnings, but we do expect to get
22 better volumes from those areas that we do carry out
23 silvicultural prescriptions. The number that we use is
24 not -- I don't have that available with me.

25 Q. Gentlemen - this is directed to the

1 five OFIA members - are any of your companies getting
2 71 cords per acre now?

3 MR. BUNCE: A. I don't think any of us
4 are harvesting stands which were produced from
5 genetically superior stock with pre-commercial thinning
6 and planting and herbicide treatments. At this point
7 none of us are harvesting stand that have reached that
8 level, so I don't know how we could.

9 Q. Dr. McCormack, is the State of -- I'm
10 sorry, note the State of Maine - is forestry as
11 practiced in the State of Maine getting 71 cords per
12 acre?

13 DR. McCORMACK: A. Well, Mr. Castrilli,
14 as I pointed out when I introduced this figure in my
15 oral evidence, that curve represents figures given to
16 Dr. Seymour and myself from forest geneticists based on
17 their early data and that one is a projection from
18 their data, so that that one incorporates the thinking
19 of forest geneticists.

20 The three other curves represent
21 projections from and measurements of actual stands of
22 real data available to us, and I would repeat for
23 clarification the first portion of the answer to the
24 interrogatory which says:

25 "The relative gains possible when the

1 silvicultural practices described are
2 employed."

3 And that is why this figure is included,
4 that those figures along the curves are not so
5 important here, it is the relative position of those
6 curves to each other to show that relative gain that
7 can be achieved by applying the silvicultural practices
8 indicated in the curve labels.

9 Q. Perhaps I could again direct this
10 question to the OFIA members on the panel. Do we have
11 estimates for the yields expected for Ontario for the
12 four types of treatment that are shown in Figure 7 --
13 rather, for the area of the undertaking?

14 MR. BUNCE: A. I'm not sure we provided
15 estimates. As I noted here, I think each company may
16 have estimates in its own yield programs for what it
17 could expect from those ones. I don't think there is
18 ones for necessarily the entire area of the undertaking
19 and I certainly couldn't speak to that. However, for
20 my own company we certainly have done some work and
21 have some projections on those types of things.

22 Q. Well, let me clarify what I'm
23 seeking. Do we have anything on the record that you
24 have produced?

25 MS. CRONK: Well, Madam Chair - I'm sorry

1 to rise - Mr. Castrilli wasn't here for the evidence of
2 the renewal panel, certainly the Industry renewal
3 panel, I don't recall whether he was here for the
4 evidence of the MNR renewal witnesses, but there was
5 evidence dealing exactly with that issue from the
6 Industry renewal witnesses.

7 MR. CASTRILLI: Well, Madam Chairman, my
8 question is specific to the four items that are on
9 Figure 7 on page 142 of Panel 7 and I don't believe
10 this figure has appeared in anyplace else in the
11 evidence.

12 MS. CRONK: No, that's right, but the
13 question relates to anticipated yields based on certain
14 types of silvicultural treatments and management
15 approaches, and with respect to the very four on this
16 table there was evidence, at least on two of those that
17 I now recall, on the renewal panel.

18 MADAM CHAIR: Mr. Bunce, were you
19 prepared to answer that question?

20 MR. BUNCE: Well, as I say, I can't
21 answer what -- I can say that there was some, we have
22 done some preliminary work. What they did on the
23 renewal panel, I can't answer for them.

24 MADAM CHAIR: Do you want to look at that
25 information over the lunch hour, Mr. Castrilli?

1 MR. CASTRILLI: That's fine, Madam Chair.

2 Sorry, one moment's indulgence, please.

3 Q. I'd like to refer you to page 143,
4 Panel 7. Dr. McCormack, you note the doubling of yield
5 from 20 cords per acre at 70 years to 48 cords per acre
6 at 50; is that right? Have I got that right?

7 DR. MCCORMACK: A. That's a description
8 that relates to the curves in Figure 7 and that's
9 essentially what's stated there in that first sentence
10 at the top of page 143.

11 Q. Mr. Stanclik, is your client -- or
12 sorry, does your company intend on using rotations of
13 50 years for spruce in Ontario -- or in the area of the
14 undertaking, excuse me?

15 MR. STANCLIK: A. For our plantations we
16 will go lower than for the natural forest, but
17 currently they wouldn't be lower than about 70 years.

18 Q. Mr. Smith?

19 MR. SMITH: A. In our internal
20 projections we're looking at a rotation age of 65 to 70
21 for spruce plantations, in that range.

22 Q. Mr. Bunce?

23 MR. BUNCE: A. I'm sorry, was this
24 related to spruce only? Because, for example, the area
25 that I am speaking of is predominantly jack pine and I

1 certainly expect that we can be looking at rotation
2 ages of 50 years in the future, I would hope.
3 Certainly it's more than we have -- we're presently at
4 70 years and I don't think 50 is out of the question.

5 Q. Okay. I didn't mean to restrict my
6 question to spruce or jack pine. Mr. Ferguson?

7 MR. FERGUSON: A. We're anticipating
8 that we can reduce the rotation age by managing the
9 forest, however, we have not seen fit at this point in
10 time to determine or to put an actual number on as to
11 how much we can reduce that.

12 Q. And I don't recall now, Mr. Ferguson,
13 what's predominantly produced on the area where -- on
14 the site where -- or the unit where you work, excuse
15 me?

16 A. We produce both jack pine and spruce.

17 Q. And Mr. Tomchik?

18 MR. TOMCHIK: A. We use -- for the
19 conifer species we use rotation ages varying -- at this
20 point we use numbers varying from 50 to 90 years
21 depending on the site and the level of management on
22 that particular site.

23 Q. Thank you, gentlemen. Is the average
24 number of cords produced per acre approximately 16 to
25 20 in Ontario -- or in the area of the undertaking?

1 You may have to convert it from hectares.

2 MR. FERGUSON: A. I can only speak for
3 my own particular area. I would suggest that the
4 volume per acre produced, as far as softwoods are
5 concerned, may be a slight bit higher, I would suggest
6 in the order of approximately 22 to 23; hardwoods
7 considerably less. Where we have poplar, they're
8 probably looking in the neighbourhood of 12 to 14 cords
9 per acre.

10 Q. Do any of the other OFIA members have
11 additional information they would like to provide with
12 respect to that?

13 MR. STANCLIK: A. In black spruce I can
14 volunteer about 15 cords per acre.

15 Q. I'm sorry, anyone else? I didn't
16 mean to exclude anyone.

17 MR. BUNCE: A. Are you talking about an
18 average across the entire area, or are you talking, for
19 example, if you took a pure jack pine stand, and
20 unfortunately my company deals in cunits, which is
21 different than --

22 Q. I think there's a conversion but I'm
23 not prepared to deal with it. If you're not either,
24 I'll accept --

25 A. Okay. If we're looking at cords, we

1 could go up to 30 some cords in our natural stands, but
2 they're also going down to --

3 Q. I'm sorry, I missed the last part.

4 A. They could be 30 some cords if in
5 you're a jack pine pure stand, and there are stands
6 we've harvested like that. However, if you're asking
7 for an average across all of the FMA, it probably could
8 range anywhere from five to 35.

9 Q. Five to 35?

10 A. Right. Depending absolutely on the
11 site that you're talking about and the species that
12 occupy that site.

13 MR. STANCLIK: A. And, Mr. Castrilli, my
14 15 cords relates to black spruce working groups in the
15 Iroquois Falls Forest only.

16 Q. I recognize there will be
17 differences. I was seeking an average from the group a
18 range, I suppose not only conifer. I'm pleased to have
19 Mr. Bunce's...

20 MR. BUNCE: A. I think it's very hard to
21 give you an average across the area of the undertaking
22 of 15 or 20 or whatever, I think it changes depending
23 on the site you have and the species that are on that
24 site and, thus, the natural stand also. We're not
25 talking about necessarily the managed stand which are

1 discussed here.

2 Q. If you could increase production to
3 71 cords per acre as is suggested at page 142, is it
4 possible that forest production policy targets could be
5 met on a much reduced land base for timber production?

6 DR. McCORMACK: A. Madam Chair, may I
7 add a point of information relative to Figure 7 that I
8 believe is an important consideration here?

9 MADAM CHAIR: Yes, Dr. McCormack.

10 DR. McCORMACK: That we specify in the
11 numbers presented here that these are good sites, so to
12 compare this with averages that would include medium to
13 poor sites would be difficult to do directly because we
14 have not accounted for the reduced productivity that
15 would result from poorer site quality.

16 MR. CASTRILLI: Q. Sorry, let me ask my
17 question again. If you could increase production to 71
18 cords per acre, could production targets be met on a
19 smaller land base for timber production?

20 MR. TOMCHIK: A. What wood production
21 targets are you referring to?

22 Q. If your company has production
23 targets, as an example. I thought I heard reference to
24 it earlier.

25 MR. FERGUSON: A. I think that's a fair

1 statement, that if we can increase the productivity per
2 unit area, be it acres or hectares, we certainly can
3 meet our requirements on a smaller area; however, it is
4 essential that we do given the current method of
5 calculating allowable cuts.

6 The MAD calculations which we are working
7 under at the present time for most of the FMAs are
8 working on an accelerated cut factor. Because of the
9 overmaturity of the natural stands in most cases, as
10 the overmature stands are harvested and the forest
11 becomes more normalized, then the land base that's
12 available to us on an annual basis will be reduced;
13 therefore, it is essential that we do increase the
14 yields per unit area over the time frames that are
15 available.

16 Q. Dr. McCormack, I wonder if I could
17 ask you to obtain your copy of Exhibit 1187. It was
18 filed yesterday by Ms. Cronk.

19 DR. McCORMACK: A. Could you perhaps
20 give a title for that exhibit?

21 Q. Yes. It's Santillo, Responses of
22 Small Mammals.

23 A. Okay. This is Responses of Small
24 Mammals and Habitat to Glyphosate Application on
25 Clearcuts?

1 Q. Yes, that's right.

2 A. I have it.

3 Q. And can I refer you to page 165.

4 A. I have that as well.

5 Q. And, Dr. McCormack, we are looking at
6 the paragraph directly under the heading that begins
7 Study Area, and it's the first paragraph under that
8 heading.

9 A. Yes.

10 Q. And we are looking at the sentence
11 that begins: "Dominant tree species..." Do you see
12 it?

13 A. Yes.

14 Q. It's about halfway down that
15 paragraph. I'll read that into the record, I would not
16 burden you with my attempt to deal with the Latin
17 pronunciations:

18 "Dominant tree species were balsam fir
19 and spruce, cone and hardwoods were paper
20 birch, American beech, yellow birch and
21 sugar maple."

22 Dr. McCormack, these are species of the
23 Great Lakes/St. Lawrence Region; is that correct?

24 A. Well, for the most part, yes. There
25 is one in there that does not occur this far west being

1 picea rubins, the third one in parentheses following
2 spruce which represents red spruce, the natural range
3 does not extend this far west.

4 Q. In other words, this study area was
5 not the boreal forest; do you agree with that?

6 A. Many of the species here are typical
7 of the boreal forest, in particular, balsam fir, black
8 spruce and what is described here as paper birch, more
9 commonly known in the area of the undertaking as white
10 birch.

11 Q. This area in particular, however, Dr.
12 McCormack, was it in the boreal forest region?

13 A. Well, Mr. Castrilli, we are getting
14 into some technical points among forest vegetation
15 scholars as to whether or not it truly represents
16 boreal forest vegetation. In our region we prefer to
17 refer to it as the Acadian Forest which is somewhat in
18 a transition, and we use that term to escape the debate
19 of whether or not it represents boreal forest.

20 Q. All right. I'll accept that
21 description. And the Acadian Forest would be the
22 predominant forest region type in New Brunswick and
23 Nova Scotia as well; is that right?

24 A. I think that's a fair general
25 description, yes.

1 Q. And would balsam fir be the major
2 tree species in the Acadian Forest?

3 A. It is a major species. I would
4 hesitate to say it is the major species and that of
5 course would depend somewhat on how one determines
6 major.

7 Q. Mr. Stanclik, is balsam fir a major
8 species by percentage in Ontario -- or, excuse me,
9 within the area of the undertaking?

10 MR. STANCLIK: A. No, it is not. It
11 does compose a component of the forest.

12 Q. Dr. McCormack, I think I am going to
13 ask you to refer to overhead No. 3 which I believe was
14 included in the package of material that has now been
15 identified as Exhibit 1133.

16 DR. MCCORMACK: A. Yes, I have that.

17 Q. Yes. I think I'm wrong about the
18 exhibit number. It must be part of Exhibit 1132.

19 A. This would be my overhead No. 3. Are
20 there sufficient copies of that in the room, or would
21 it assist the Board if I were to put this on the screen
22 and the overhead projector?

23 MADAM CHAIR: Is that agreeable to you,
24 Mr. Castrilli?

25 MR. CASTRILLI: If it's not inconvenient

1 to you, Dr. McCormack.

2 DR. McCORMACK: I have it. That was the
3 one I referred to in a general way as a fishing chart
4 with circles and so forth, yes.

5 MR. CASTRILLI: Q. Now, as I recall your
6 testimony with respect to this overhead, you indicated
7 that these trees are representative of those within the
8 area of the undertaking?

9 DR. McCORMACK: A. Yes, I did.

10 Q. And the reference -- I wonder if you
11 could perhaps just raise the slide slightly so we can
12 see all of the wording on the figure reference.

13 A. Sure.

14 Q. Thank you. The reference at the
15 bottom of the overhead is to species in northeastern
16 forests.

17 A. That's correct.

18 Q. Did you mean northeastern United
19 States, northeastern United States and Canada; what
20 exactly was the reference to northeastern?

21 A. My reference is to northeastern North
22 America and, as I defined that earlier in my evidence,
23 I can include Ontario east to Newfoundland and south to
24 the upper portions of New York state.

25 That caption happens to be the same

1 caption that was present when this figure was first
2 used in a literature review that I presented at a
3 professional meeting where I was to talk about
4 northeastern forests in that sense and that is why the
5 term is used here.

6 Q. So I'm clear, Dr. McCormack, was this
7 figure prepared from information on the boreal forest
8 region?

9 A. To some extent, yes, it was,
10 especially regarding species represented here which
11 occur in the boreal forest, and perhaps it would assist
12 if I could be more specific here.

13 Under spruce, this includes black spruce
14 as well as white spruce in a general consideration of
15 the genus spruce; the fir is balsam fir; the one
16 referred to, as I have indicated earlier, as paper
17 birch is in fact white birch as it is known in the
18 boreal forest; red maple to some extent represents soft
19 maples or red maple as present in the area of the
20 undertaking as well as mountain maple which handles
21 much the same way; aspen is trembling aspen, which is a
22 typical component; pin cherry also present, and
23 raspberry is that same common raspberry we have been
24 discussing.

25 Q. That's fine. I'm wondering, Dr.

1 McCormack, since you now have the machine on, if I
2 could ask you to place overhead No. 4 on the screen.

3 Dr. McCormack, am I correct that this
4 particular overhead does not otherwise appear in the
5 Panel 7 evidence, so this is the only place we have it;
6 is that right?

7 A. That's correct.

8 Q. Just looking at overhead No. 4 then,
9 what forest region was this developed from?

10 A. No forest region in particular. This
11 is a generic diagram developed by my colleague Dr.
12 Newton. It was published in the proceedings of a
13 continent-wide conference held at Purdue, but at
14 approximately the same time this same diagram was used
15 for a workshop in which we participated here in Toronto
16 and it was intended as a generic diagram to show the
17 relationships of vegetation developing over time with
18 and without vegetation management.

19 Q. That's fine, thank you.

20 Dr. McCormack, in a number of places in
21 your evidence both with respect to -- I'm sorry, just
22 with respect to tending -- perhaps I should refer you
23 to a page. Page 85.

24 A. This is page 85 of...?

25 Q. Of Exhibit 11...

1 A. That's the evidence statement?

2 Q. Yes, it's Exhibit 1131.

3 A. I have page 85.

4 Q. You indicate there that:

5 "...a broad range of cost-effective
6 management alternatives...must be
7 available..."

8 This is Item (b), top half of the page.

9 A. As alternatives for tending--

10 Q. Yes, for tending.

11 A. --in this case, yes.

12 Q. Yes. I just wanted to deal with the
13 tending aspect. And we asked you an interrogatory in
14 relation to that, page 9 of Exhibit 1192, it's
15 Interrogatory Question 8.

16 A. I have No. 8.

17 Q. We asked you to please define
18 cost-effective in the context of the statement as it
19 appeared in page 85 of Exhibit 1131, and your answer
20 in this context was that cost effective means
21 affordable. To whom?

22 A. Affordable to whatever is the
23 management group responsible for carrying out the
24 tending. The implication here is if you do not have
25 the financial resources to carry out an activity that

1 has been defined, then you can't afford to do it and it
2 cannot be done.

3 Q. Wouldn't any spray operation which is
4 subsidized be cost effective?

5 A. I guess in my perspective that
6 subsidy must also come from some source and be
7 justified in the process of carrying out that program.
8 But in terms of the specifics of administering
9 subsidies regarding tending activities in the area of
10 the undertaking, I would suggest that the OFIA members
11 of the panel are in a much better position to address
12 the specifics of that part of tending since they deal
13 directly with these subsidies.

14 Q. I'm content to have their response,
15 if any of the OFIA members wish to add to whatever Dr.
16 McCormack has advised us.

17 MR. STANCLIK: A. Mr. Castrilli, with
18 regards to subsidies, despite the fact that we are
19 subsidized for the activities we carry out, we still
20 look upon the cost of the treatment as being what is
21 considered as to whether something is affordable or
22 cost effective, regardless of the fact that we may
23 receive a subsidy for it. We weigh that alone to
24 determine whether the cost effectiveness is there.

25 Q. Was there any other member of the

1 OFIA that wanted to add anything?

2 (no response)

3 I see.

4 MR. MARTEL: Could I ask a question?

5 MR. CASTRILLI: Yes.

6 MR. MARTEL: If it were that you paid for
7 it yourself; in other words, there was no subsidy, you
8 would still take the same position as to whether it
9 were --

10 MR. STANCLIK: We would go through
11 exactly the same type of decision, yes.

12 MR. TOMCHIK: As a forester, yes, we
13 would make that same decision.

14 MR. MARTEL: And the corporate body would
15 decide whether you proceed or not, but as a forester
16 you would make that decision?

17 MR. STANCLIK: That's correct.

18 MADAM CHAIR: Is this a convenient time
19 to break for lunch, Mr. Castrilli?

20 MR. CASTRILLI: Yes, actually it would
21 be, Madam Chair.

22 MADAM CHAIR: How are you progressing
23 with the cross-examination? Mr. Martel thinks you're
24 just about finished, but I know you're going to
25 disappoint him.

1 MR. CASTRILLI: I'm afraid I can't say
2 that. It's possible, Madam Chair, that if we sat
3 slightly later today I might be able to finish, but
4 it's a little bit difficult to say. I think I will
5 have a better idea when we return -- or after the
6 afternoon break.

7 MADAM CHAIR: All right. Thank you, Mr.
8 Castrilli.

9 The Board will be back at 1:30.

10 ---Luncheon recess taken at 12:00 p.m.

11 ---On resuming at 1:35 p.m.

12 MADAM CHAIR: Please be seated.

13 Mr. Castrilli?

14 MR. CASTRILLI: Thank you, Madam Chair.

15 Q. Dr. McCormack, continuing with you.

16 I just wanted to clarify an answer you gave to Mr.
17 Martel arising from a question he asked you this
18 morning. It might, I suspect, be more easily done if
19 we return to Table 8, page 128 of your evidence.

20 I believe the question that Mr. Martel
21 asked you, Dr. McCormack, related to whether you would
22 be able to measure hardwood volume if that was what had
23 just been sprayed.

24 MR. CASTRILLI: Do I have the gist of
25 that question correctly, Mr. Martel?

1 MR. MARTEL: Yes.

2 MR. CASTRILLI: Q. The essence of what I
3 thought your answer was, was that you could not measure
4 hardwood volume because that was in fact what had just
5 been sprayed and, therefore, would not be there to be
6 measured. Do I have that right?

7 DR. McCORMACK: A. Generally, yes, but
8 it depends on what conditions were present at the time
9 of the treatment. In some of the cases reported in
10 Table 8, the youngest of those were those having the
11 shortest period of response, the two year, three year
12 types would be very young plantations that could have
13 followed at least some type of mechanical site
14 preparation where there would have been no such
15 vegetation of a sufficient size to measure, almost
16 regardless of what took place. That would be at one
17 end of the spectrum.

18 At the other end on many of these studies
19 the material would have been removed or reduced to a
20 point where depending on when you measured it would not
21 have been measurable.

22 Q. I'm just wondering, would one not
23 expect in a scientific experiment that you would also
24 have a control plot?

25 A. Yes, where it was a designed

1 experiment and in these cases there was some basis for
2 comparison, of course.

3 Q. But for the ones we have seen, for
4 the most part we don't have any information about what
5 the hardwood volume might have been on the control
6 plot?

7 A. Same on the untreated, it's not
8 likely because the basis for comparison being that of
9 potential crop trees on the treated area to be compared
10 with the potential crop trees on the untreated area.
11 That is, in all cases here, the focus of attention.

12 Q. That's fine. Thank you.

13 Yesterday, Dr. McCormack, you referred
14 the Board to the issue of Norway spruce, it was Exhibit
15 1184. Maybe for the purposes of this question I don't
16 need to actually -- I'm not going to actually refer you
17 to a specific passage in that exhibit, it was more for
18 frame of reference than anything else. So if you will
19 bear with me for a moment...

20 A. All right.

21 Q. All right. For what purposes is
22 Norway spruce grown, if you know, in Nova Scotia? Is
23 it a commercial tree in Nova Scotia?

24 A. Say again?

25 Q. Is it a commercial tree in Nova

1 Scotia?

2 A. In a few cases, yes. It is a spruce
3 species over which there is considerable interest, but
4 it has not existed in sufficient quantities to be used
5 in significant commercial volumes. It's a spruce and
6 is often studied when it's present as at least a
7 species within that genus.

8 Q. Mr. Stanclik, can you advise the
9 Board, in Ontario is Norway spruce predominantly
10 planted for ornamental and windbreak purposes in the
11 area of the undertaking?

12 MR. STANCLIK: A. I am not aware of what
13 its prior use is, I know we just recently harvested a
14 Norway spruce plantation and delivered the wood to our
15 mill.

16 Q. Is Norway spruce a commercial species
17 in Ontario for lumber or pulpwood purposes?

18 A. Again, I would rather just comment on
19 my own area.

20 Q. Fine. Why don't I simply expand the
21 question to any of the members of the OFIA.

22 MR. BUNCE: A. Norway spruce is not a
23 commercial species on the FMAs...

24 Q. I'm sorry, Mr. Bunce?

25 A. Norway spruce is not a commercial

1 species at this time on E.B. Eddy's FMAs.

2 MR. TOMCHICK: A. Within the area of the
3 undertaking?

4 Q. Yes.

5 Sorry, Mr. Tomchick, was there going to
6 follow a response?

7 A. Well, we have taken at our mill
8 Norway spruce; however, the Norway spruce did not come
9 from the area of the undertaking.

10 Q. Again I will direct this question to
11 the OFIA members, if you know. How much of the
12 commercial crop in Ontario is Norway spruce?

13 MR. STANCLIK: A. I don't know.

14 Q. Fine.

15 MR. TOMCHICK: A. If I might add to
16 that, there are Norway spruce plantations and I'm not
17 sure if they get into the area of the undertaking.

18 However, in the southern portion of the
19 province - again, I don't know if it gets right up into
20 the area of the undertaking - Norway spruce plantations
21 have been established and, in terms of our mill, we
22 would be -- we can take some Norway spruce material if
23 it did become available. So in that sense it would be
24 a commercial species.

25 Q. Dr. McCormack, I believe you

1 indicated earlier the State of Maine is in what you
2 describe as the Acadian Forest type? .

3 DR. McCORMACK: A. The northern part of
4 the state where the operational scale forestry is
5 carried out, yes.

6 Q. And would that have included the area
7 that was dealt with in Exhibit 1187, that's the
8 Santillo article on responses of small mammals?

9 A. Yes.

10 Q. And this is one where I would want to
11 refer you to the exhibit.

12 A. This is referring to Santillo's small
13 mammals?

14 Q. Yes.

15 A. Okay, I have that.

16 Q. Would you turn to page 165.

17 A. Yes.

18 Q. I see in the second paragraph under
19 the heading Study Area that this particular portion of
20 land had been clearcut and strip cut.

21 Now, is that your understanding of what
22 took place prior to the experiments you were involved
23 in?

24 A. That is in fact what the conditions
25 were.

1 Q. I will direct this question to the
2 OFIA members. Would you clearcut and spray in the
3 Great Lakes/St. Lawrence Region?

4 MR. STANCLIK: A. I can't answer that,
5 I'm not familiar with the Great Lakes/St. Lawrence.

6 Q. I'm sorry. Is there a member on the
7 panel from the Great Lakes/St. Lawrence Region?

8 MR. BUNCE: A. I would say that I'm in
9 the Great Lakes/St. Lawrence, I'm in the transition
10 zone of the Great Lakes/St. Lawrence. It's very hard
11 to define where that line may well be, but we do
12 clearcut and spray, however, the species that we do at
13 that point probably in the transition and not
14 necessarily to the Great Lakes/St. Lawrence ways.

15 Q. I see. Have any of the OFIA members
16 of the panel worked on units where they knew for
17 certain they were in the Great Lakes/St. Lawrence?

18 A. I'm not sure what you mean by certain
19 they were in the Great Lakes/St. Lawrence.

20 Q. Where you knew you weren't in the
21 transition zone.

22 A. I think any forester would have a
23 tough time trying to decide where it was. If you were
24 asking about the tolerant hardwoods or something, then
25 you know where you are.

1 Q. All right. I would like to refer you
2 to page 69 of the evidence. On this page you describe
3 the various choices among tending alternatives which
4 are listed at the bottom of page 69, and these include
5 mechanical, prescribed burning, manual control
6 measures, chemical control measures, any combination of
7 the above, and no treatment.

8 On page 70 in the second full paragraph,
9 third sentence, you outline the position of the
10 Industry and that position, as I understand it, is
11 that:

12 "For prevention and release purposes the
13 use of chemical control measures is
14 usually the most effective treatment and
15 in many circumstances is the only
16 practical alternative."

17 I just want to set the context and
18 explore that proposition with you.

19 Firstly, Dr. McCormack, at pages 79 and
20 80, as I understand your evidence with respect to
21 manual treatments, your view appears to be that they
22 may not be effective due, for example, to the possible
23 need to undertake retreatments. Do I have that
24 correct?

25 DR. MCCORMACK: A. I guess I need to

1 hear that again, please.

2 Q. Sure. If I understand your evidence
3 with respect to the issue about the efficacy of manual
4 treatments, your position is that they may not be
5 effective due to the need or the possible need to
6 undertake retreatment?

7 A. Not exactly. I guess, Mr. Castrilli,
8 I look at the need to retreat as a response to part of
9 the problem and an additional inconvenience and cost.

10 The major reason why they are not as
11 effective as, for example, the herbicide alternative,
12 is that the root systems remain alive and competitive
13 even though the tops have been removed. That, combined
14 with the mechanical disturbance or potential mechanical
15 disturbance of young crop trees resulting from the
16 manually cut brush falling across them, would be the
17 major considerations in the lower effectiveness of
18 manual treatments.

19 Q. When I was referring you to pages 79
20 and 80 I was, in particular, looking at the second line
21 of page 79, for example, where you say that manual
22 treatments may not be effective per se, and then--

23 A. Yes.

24 Q. --on page 80, the first full
25 paragraph, you indicate that, arising from a study done

1 by Walstad in 1987:

2 "Manual site preparation treatments often
3 require repeat treatments because of
4 the sprouting potential of cut hardwood
5 species."

6 A. Yes.

7 Q. I took from that that your position
8 was that manual treatments may not be effective,
9 period. As I understand what you've just advised the
10 Board, it's that they may be as effective as
11 herbicides?

12 A. That's a more general statement, but
13 within that there certainly are cases where they are
14 not effective. It depends on the species which are
15 being taken out in the manual tending treatment as to
16 the levels of effectiveness.

17 Q. And would you expect as a general
18 rule, Dr. McCormack, that the higher the productivity
19 of a site the more vigorous and severe will be the
20 competing vegetation?

21 A. Yes, I would.

22 Q. And is it your view that successful
23 silvicultural operations can be conducted without
24 herbicides on a systematic basis?

25 A. I can think of some exceptional

1 situations where that possibility might exist, but I
2 would want to make sure that I had an unlimited budget
3 and I was not under high pressures to provide raw
4 material to a utilization point.

5 Q. Let's see if I can understand that.
6 Can there be successful silvicultural operations
7 without herbicides?

8 A. With the qualifications that I
9 stated, yes.

10 Q. Sorry. Let me be certain about what
11 the qualifications are. Can you restate them for me,
12 please?

13 A. That I had an unlimited budget to
14 support the tending operation and that I was not under
15 heavy pressure to provide raw material to a utilization
16 point; in other words, I was not obligated to any end
17 user to produce a specified amount of usable wood
18 material, then there could be a situation where
19 silviculture was effective, but not very productive.

20 MR. TOMCHICK: A. If I can be of some
21 assistance, I think through our case studies we've
22 shown that on some sites -- on some specific sites
23 herbicide treatments are not necessary in order to have
24 silvicultural success.

25 Q. Actually I'm just wondering,

1 gentlemen - perhaps you can help me, I think if you
2 know, what the size is of the FMA area each of you
3 works on.

4 Can I begin with you, Mr. Stanclik?

5 MR. STANCLIK: A. Productive forest
6 land?

7 Q. (nodding affirmatively)

8 A. I think that's about 735,000
9 hectares.

10 Q. And, Mr. Smith, do you know?

11 MR. SMITH: A. I'm just estimating here,
12 but I would say about 2,400 square kilometres.

13 Q. Is that also productive forest?

14 A. Pardon me?

15 Q. Is that also productive forest?

16 A. Productive -- that's the total land
17 base area. I'm not one hundred per cent certain of the
18 productive forest ratio in that figure.

19 Q. Mr. Bunce, do you know?

20 MR. BUNCE: A. I'm not at liberty to
21 give you a number off the top of my head. I could find
22 out for you, if you would like, the exact number.

23 Q. All right. If you can, I would
24 appreciate that.

25 Mr. Ferguson?

1 A. Would you like that for the three
2 FMAs of the company, or...

3 Q. Yes.

4 A. I will do that.

5 Q. Mr. Ferguson?

6 MR. FERGUSON: A. I'm sorry, I can't
7 recall the numbers off the top of my head and I could
8 undertake to find that out for you.

9 Q. If it's not too difficult, I'd
10 appreciate it.

11 Mr. Tomchick, do you know?

12 MR. TOMCHICK: A. I don't have
13 productive land base. I can tell you what the
14 approximate area of the three FMAs plus the unit volume
15 agreement is. The total land base is somewhere around
16 7,900 square kilometres.

17 Q. If it isn't too difficult to obtain
18 the figure with respect to productive land, I would
19 appreciate it if we could have it.

20 MR. BUNCE: A. Mr. Castrilli, in the
21 case study we have listed 1.3-million hectares of
22 productive forest land.

23 Q. I'm sorry?

24 A. 1.3-million hectares or 3.3-million
25 acres of productive forest management agreement area.

1 Q. That's for the three FMAs together?

2 A. Yes.

3 Q. Okay. Dr. McCormack, I provided to
4 you yesterday, to your counsel a paper entitled:
5 Successful Silvicultural Operations without Herbicides
6 in a Multiple Use Environment, by Tom C. Turpin.

7 Did you have a chance to review the
8 article?

9 DR. MCCORMACK: A. Yes, I have, I
10 reviewed it last night.

11 Q. And I understand from your testimony
12 on May 16th that you are familiar with the forests of
13 the Pacific Northwest; is that right?

14 A. That I am familiar with them?

15 Q. Yes.

16 A. Yes, I am to some extent, yes.

17 Q. And I also understand you personally
18 observed the forest floor then?

19 A. I have.

20 MR. CASTRILLI: Madam Chair, I would like
21 to make this the next exhibit.

22 MADAM CHAIR: That's 1194.

23 MS. CRONK: Sorry, Madam Chair, I didn't
24 hear that.

25 MADAM CHAIR: 1194.

1 MR. CASTRILLI: Just for the record, the
2 article is: Successful Silvicultural Operations
3 without Herbicides in a Multiple Use Environment by
4 Thomas C. Turpin, who is identified at the bottom of
5 page 1 as the forest silviculturist for the Siuslaw
6 National Forest, Pacific Northwest Region, United
7 States Department of Agriculture Forest Service in
8 Corvallis, Oregon, and the paper was presented at a
9 National Silviculture Workshop in Sacramento,
10 California in May, 1987.

11 ---EXHIBIT NO. 1194: Paper entitled: Successful
12 Silvicultural Operations without
13 Herbicides in a Multiple Use
 Environment, by Thomas C. Turpin.

14 MR. CASTRILLI: Q. Dr. McCormack, I
15 would like to go through this together with you, if I
16 might. First of all, are you familiar with this
17 particular National Forest?

18 DR. McCORMACK: A. I have visited it and
19 observed some operations in that area. It was a
20 passing through trip.

21 Q. Just begin on page 1, looking at the
22 last paragraph on the page:

23 "On a per-acre basis, the Siuslaw is the
24 most productive National Forest in the
25 country", meaning the U.S.

1 Do you have any information that would
2 either confirm or not that position, or if you know?

3 A. It is not for me to say it is the
4 most productive. I know in terms of their capability
5 of producing Douglas-fir timber it is certainly one of
6 the most productive, national forests we are referring
7 to here.

8 Q. Yes.

9 A. This would be federally owned land
10 set up for management as a national forest.

11 Q. That's fine, thank you. Now, I'm
12 just wondering if I can ask you to turn for a moment to
13 page 80 of your evidence again. We are now looking at
14 the second full paragraph on the page.

15 A. Yes.

16 Q. The sentences that begins:

17 "The general rule is..."

18 A. Yes.

19 Q. "...the higher the productivity of a
20 site the more vigorous and severe will be
21 the competing vegetation."

22 Would that general proposition apply to a
23 national forest like the Siuslaw; that is to say, if
24 the Siuslaw is a highly productive forest one could
25 expect more vigorous and severe competition?

1 A. Well, this statement refers in a
2 comparative way within a region.

3 Q. Sorry, what did you say?

4 A. I'm sorry, the sentence from the
5 statement of evidence which has just been read
6 referring to: "The general rule is...", that this
7 refers to comparative site quality within the regions.

8 When one looks at the sites that are
9 described in this paper, Exhibit 1194, one must
10 remember that they are on the wet side of the Pacific
11 Coast range, and if one looks at the upper portion of
12 that page 1 and see that you get annual precipitation
13 varying from 80 to 120 inches per year - that's annual
14 precipitation of course - and conditions such as that,
15 there are climatological factors that also enter in
16 here in terms of the productivity of this particular
17 forest.

18 Q. Okay, I accept that. But as a
19 general proposition, would it fair to say that if this
20 is a productive national forest -- productive forest,
21 that one could expect vigorous and severe competition
22 because of that factor?

23 A. One could expect vigorous
24 competition.

25 Q. Thank you. I would like to move on

1 to page 2 of Exhibit 1194, this under the heading of
2 Management Situation.

3 In the first sentence the author states
4 that:

5 "The Siuslaw Forest contains some of the
6 most productive land for conifer
7 production in the world."

8 Are you in a position to either verify
9 that statement or even confine it to the United States,
10 if you know?

11 A. With respect to their capability, as
12 I mentioned earlier, of producing rapid growth and high
13 yields of Douglas-fir timber, yes, that's correct.

14 Q. Thank you. And actually you have
15 just referred to what I was going to deal with next.
16 In the first paragraph, the author outlines what the
17 major conifer species is, the Douglas-fir and the Sitka
18 spruce and also the major species of hardwoods, red
19 alder.

20 And then down at the bottom -- no, sorry,
21 paragraph 3, the major hardwood competition is red
22 alder at ages five to eight and Salmonberry at ages two
23 to four of the plantation.

24 A. That's typically the case in that
25 region.

1 Q. That's your understanding?

2 A. It is my knowledge.

3 Q. Now, continuing with page 2, under
4 the next heading on that page, the author outlines
5 that:

6 "Until 1984, the primary method for
7 controlling vegetation during the
8 plantation development period was
9 herbicides."

10 And in the last paragraph on page 2 he
11 indicates that:

12 "The treatments were primarily for site
13 preparation and stand release."

14 And just stopping there, Dr. McCormack.
15 Those two activities, site preparation and stand
16 release, were also the main activities that you focused
17 your evidence on in chief; is that correct?

18 A. That is.

19 Q. Now, looking at paragraph 5 on page
20 2, the author notes that:

21 "The last use of herbicides on the
22 Siuslaw Forest occurred in fiscal year
23 1983 and that since then the
24 silvicultural needs on the Siuslaw
25 National Forest have been met with

1 non-chemical alternatives."

2 Were you aware of that, Dr. McCormack?

3 A. In a general way, yes, I was.

4 Q. Do you have any knowledge of
5 whether -- to be fair, this paper was written in 1987,
6 so it covers a period 1983 to 1987. Are you aware of
7 whether that situation changed after 1987?

8 A. I am not aware of a change, however,
9 I could be out of date in my knowledge of those
10 activities.

11 I do know that there is a voluminous
12 environmental impact statement which has been prepared
13 by USDA Forest Service to evaluate the situation in
14 that U.S. Forest Service region. I think it is
15 currently under review.

16 Q. That's fine.

17 A. But I'm not certain of the status of
18 that.

19 Q. Thank you. I'm going to move on to
20 page 3 of Exhibit 1194, this is under the heading
21 Current Practices, and to be fair, we must keep it in
22 the context of when the paper was written, we're
23 speaking of the period 1983 to 1987.

24 Just beginning at the top of the page, in
25 the first full paragraph:

1 "Since 1983, all site preparation and
2 release has been done by manual means,
3 yet the number of acres receiving
4 treatment yearly have basically remained
5 the same."

6 I'm just going to read the whole
7 paragraph into the record if you'll bear with me for a
8 moment.

9 "Some operations (especially site
10 preparation) are more expensive now than
11 when treatment was accomplished by
12 herbicides. The cost of some treatments
13 has increased because of retreatment
14 needs. But to date, the Forest has not
15 lost any plantations to vegetative
16 competition. Although costs have
17 sometimes increased and some decreases in
18 growth may be occurring, no reforestation
19 or release backlog has developed on the
20 Forest."

21 It's a long paragraph and, to be fair to
22 you, I think we should go through it in pieces, if we
23 might.

24 Firstly, the first sentence which
25 indicated that since 1983 all site preparation and

1 release has been done by manual means; were you aware
2 of that fact?

3 A. I was aware that there was
4 considerable effort going on in that regard. I am not
5 in a position to say that absolutely all of it has been
6 done in that manner, but I suspect that everything done
7 on the federally owned land has been carried out
8 manually, yes.

9 Q. And moving on to the next -- sorry,
10 the second sentence in that paragraph:

11 "The number of acres receiving treatment
12 yearly have basically remained the same."

13 Were you aware of that, or are you in a
14 position to comment on it?

15 A. I guess I have some reason to
16 question that. I think there are some indications that
17 the areas being treated have been reduced somewhat
18 since the acreage that is described on page 2 where
19 they state 5,600 acres treated each year.

20 I think there have been some indications
21 that that area has been reduced since they have shifted
22 over to the manual means of treatment.

23 Q. Sorry, some indication in this -- but
24 not in this paper?

25 A. Not in this paper, no.

1 Q. In other information you're aware of?

2 A. There's no indication of that right
3 here.

4 Q. Moving down that paragraph, the
5 sentence that begins:

6 "But to date... "

7 A. Yes.

8 Q. "The Forest has not lost any
9 plantations to vegetative competition."
10 Are you in a position to confirm that, or
11 do you know?

12 A. I am not in a position to confirm
13 that. I suspect -- Mr. Turpin says that that is in
14 fact the case. In reading this though my curiosity
15 was aroused that though he says no plantations have
16 been lost, nowhere does he tell us how well they are
17 growing, and I guess that is the logical question that
18 occurred to me in reading that statement.

19 Q. And the last sentence, and to be fair
20 I will just read the entire sentence into the record
21 again:

22 "Although costs have sometimes increased
23 and some decreases in growth may be
24 occurring, no reforestation or release
25 backlog has developed on the Forest."

1 Let's break the sentence up into two
2 parts. Let's deal with the last part first.

3 "No reforestation or release backlog has
4 developed on the forest."

5 Were you aware of that, or do you have
6 any further information?

7 A. I think that goes hand in hand with
8 the fact of the earlier statement saying they have not
9 lost any of their plantations, which means that these
10 figures are expressed on the basis of land area needed
11 to be regenerated and land area that has living trees
12 which have been planted. That's a measure of whether
13 or not there is a backlog.

14 But traditionally the Forest Service
15 measures this on the basis of a count of planted trees
16 which are alive but there is no further evaluation made
17 of the condition of those trees.

18 So, on that basis, I really have no
19 reason to question this statement.

20 Q. I would like to refer you to page 4.
21 This is under the heading New Information -- sorry, New
22 Methodology and Information. The author states that:

23 "The absence of herbicides has been
24 overcome by the application of new
25 methodology and new information."

1 And it identifies four. I would like to
2 go through each one of them with you.

3 The first one is the Item No. 1:
4 "The development and use of better
5 quality seedlings along with improved
6 animal control techniques have minimized
7 replants and given plantations a fast
8 start."

9 I will read the whole paragraph for the
10 record, for completeness sake.

11 "In fiscal year 1986 the Forest's replant
12 percentage was one per cent. This is
13 down from a 20 per cent replant rate just
14 five years ago. The use of better
15 quality seedlings is largely responsible
16 for this decrease in replanting needs."

17 Just stopping there, Dr. McCormack. When
18 you earlier in our discussion this morning were
19 discussing - and also in your examination-in-chief -
20 the issue of genetics, was part of that concept the
21 issue of newer, different or better quality seedling,
22 or was there something more to what you understood in
23 terms of genetics?

24 A. Well, it relates to this; however in
25 the case of the Douglas-fir, plantings which are

1 referred to here in this paper, I think reference is
2 being made more to size, branch and root development,
3 and overall condition of the planting stock.

4 Over the past several years there have
5 been a number of studies conducted at Oregon State
6 University evaluating quality of Douglas-fir planting
7 stock and it has shown that superior in quality -
8 meaning size and development as I have described -
9 Douglas-fir planting stock is better able to compete
10 when placed on the site, and it was interesting and in
11 evaluating the costs of this strategy, Mr. Turpin does
12 not include the additional costs of the better quality
13 seedlings as part of the cost in overcoming their lack
14 of herbicides, which caught my attention in that Item
15 1.

16 Q. Just focusing for a moment then on
17 the question of whether better quality seedlings can
18 result in a decrease in replanting needs, is that a
19 proposition you agree with generally, or on the basis
20 of any of your practical or research experience?

21 A. One of the strategies that's
22 especially useful for short needled conifers is to have
23 improved quality of planting stock to overcome the
24 initial disadvantage they might have had in competing
25 with the other vegetation on the site, yes.

1 Q. All right. Gentlemen, perhaps I can
2 refer this next question to the OFIA members of the
3 panel, and perhaps particularly Mr. Tomchick.

4 You spoke yesterday, Mr. Tomchick, about
5 the issue of research and the need to spend more money
6 on research needs, and I thought it was predominantly
7 in relation to herbicides.

8 For the various groups you identified on
9 the record yesterday, do those groups have a policy
10 with respect to research addressing the issue of
11 producing better quality seedlings, per se?

12 MR. TOMCHICK: A. Well, Mr. Castrilli,
13 under the Ontario -- in the Ontario Forestry Research
14 Committee there are six subcommittees of that
15 committee; the one chaired by Rosemary Rauter of OFIA
16 is tree seed stock production and forest genetics, and
17 they would address issues of stock quality.

18 Q. Do they have a research budget? Do
19 they award contracts to engage in this type of
20 research?

21 A. No, they -- for the advice of the
22 Ontario Forestry Council they establish or they look at
23 priorities and research needs and would recommend where
24 provincial research dollars should be spent. So they
25 themselves do not -- they themselves do not have a

1 budget.

2 Q. Oh, I see. So do any of these groups
3 that you identified yesterday of the Industry groups
4 have a budget?

5 A. Of Industry groups?

6 Q. Yes.

7 A. Oh, I can only speak for our company.
8 We have a research budget, but that's -- I'm not in a
9 position to divulge what our research budgets are.

10 Q. Well, I don't need to know. Have you
11 spent any money on better quality seedling as a
12 research budget item?

13 MR. STANCLIK: A. Might I add something
14 here?

15 Q. Yes. If Mr. Tomchick wants a moment
16 to think about it, I'd be pleased to have your
17 comments.

18 A. Our company contracts directly with
19 growers for stock and we are directly funding out of
20 our own funds what we consider to be superior stock
21 that exceeds MNR requirements and that is not
22 subsidized by MNR.

23 Q. Sorry?

24 A. Is not subsidized by the MNR.

25 Q. I'm sorry, Mr. Stanclik, I missed the

1 very first part of your answer.

2 A. We are paying out of our own pocket,
3 therefore, we are funding the growth of better stock
4 than what is required under MNR -- pardon me, MNR
5 specifications so we are -- in relation to the question
6 you asked Mr. Tomchick, we are spending money on
7 research to produce better stock than we feel is
8 required in the forest.

9 Q. Sorry, Mr. Tomchick, do you want to
10 add something to that?

11 MR. TOMCHICK: A. Yes. We are just
12 getting in. As Mr. Stanclik said, our company is just
13 getting into some agreements with direct contracts with
14 nurseries and we intend to work with them in order to
15 produce stock of the type and quality that we want in
16 that respect, and those contracts that we have with
17 those nurseries are direct contracts between our
18 company and that nursery, so the dollars do come out of
19 our pocket.

20 Now, these aren't -- they won't be
21 research projects, but we will certainly work with
22 those nurseries to produce the type, size and quality
23 of stock we want.

24 Q. Mr. Stanclik, you indicated that the
25 stock you are producing is superior to that of MNR?

1 MR. STANCLIK: A. No, I'm saying it
2 exceeds MNR requirements to be funded.

3 Q. I see. Thank you.

4 MR. FERGUSON: A. Mr. Castrilli, if I
5 may add there, just that our company, Canadian Pacific,
6 as well as other OFIA companies, are participants in
7 the Ontario Tree Improvement Council in conjunction
8 with Natural Resources and that this is working towards
9 genetically improved planting stock and seed.

10 Q. I see, all right. Dr. McCormack,
11 would reseeded initiatives or replanting initiatives
12 of the type described by Mr. Stanclik and Mr. Tomchick
13 and Mr. Ferguson assist in reducing the need to use
14 herbicides, in your view?

15 DR. MCCORMACK: A. It could in certain
16 cases depending on the species and the site conditions.

17 Q. I will return to Exhibit 1194, this
18 is now item -- or Method No. 2. For the sake of
19 completeness, gentlemen, I will just read the entirety
20 of the paragraph into the record:

21 "The target stocking levels have been
22 reduced as a result of better yield
23 models and economic analyses. Now the
24 target is 250 to 300 trees per acre at
25 age 10, instead of 430 trees per acre at

1 age 10. This has not reduced the number
2 of acres needing release, but the
3 reduction in the stems per acre will
4 produce a marketable product 12 inches
5 dbh in 35 years. The 430 stems per acre
6 produced a 7 1/2 inch product at the same
7 age and this product was not readily
8 marketable."

9 Firstly, just breaking that paragraph
10 down into its parts as well, Dr. McCormack, do you
11 agree that better yield models and economic analyses
12 which allow stocking levels to be reduced are another
13 method by which the absence of herbicides could be
14 overcome?

15 A. We do have better yield models that
16 provide guidelines for changing the levels of stocking.
17 They have assisted managers in making those decisions.

18 Q. Sorry, had you completed your answer?

19 A. I guess in response to your question
20 I guess I have, yes.

21 Q. I just wanted to be clear on your
22 answer. Would the effect of better yield models, for
23 example, result in a lessened need to use herbicides?

24 A. Not necessarily, no.

25 Q. What information do you have that you

1 rely upon for that conclusion?

2 A. Well, we can address yield models in
3 a general way. Since I am not personally familiar with
4 any yield models that any of the OFIA representatives
5 are working with, most of the yield models with which I
6 am familiar essentially require herbicide tending in
7 order to achieve the end result which they project.

8 Q. I see. Obviously this one doesn't in
9 Oregon. I'm just wondering of -- did you know about
10 this particular methodology prior to giving testimony?

11 A. Yes, I am generally familiar with the
12 situation and I am personally acquainted with
13 landowners in this region where this same national
14 forest is located and I know that a major basis for
15 what they're doing here is exactly what is reflected in
16 that Item No. 2 where they make reference to 250 to 300
17 trees per acre, which translates into a maximum level
18 of about 740 crop trees per hectare if we want to put
19 it in terms of metric land area.

20 The difference here is, we are dealing
21 with a very special growing condition, the wet side of
22 the coastal range is very productive, as has already
23 been brought out; we are also dealing with a single
24 crop tree species here which is Douglas-fir which is
25 very responsive to these conditions, therefore, it is

1 able to achieve a position of dominance in a relatively
2 short period of time.

3 Because it develops so rapidly and
4 expands its crown so vigorously, it is possible for
5 these managers to carry 300 or less trees per acre,
6 which is a relatively low number. I think these
7 conditions, the growing conditions and the number of
8 potential crop trees per unit every of area are not
9 translateable to the area of the undertaking.

10 Q. Why do you say that, Dr. McCormack?

11 A. Because of my knowledge of the growth
12 of conifer crop trees in both regions, my familiarity
13 with Douglas-fir, and this number of trees per unit of
14 land area is on the low end of what would satisfy the
15 satisfactory stocking and that, in part, is a
16 consideration of the capability of Douglas-fir to grow
17 very rapidly under these conditions.

18 Q. Let's move on to point No. 3 which is
19 on the same page -- I'm sorry, Method No. 3. The third
20 method by which the absence of herbicides can be
21 overcome, according to Turpin, is Item No. 3, and I
22 will just read that into the record:

23 "Research conducted on the Siuslaw has
24 determined the window of success for hand
25 release of red alder. This research was

1 done co-operatively with the Pacific
2 Northwest Forest and Range Experiment
3 Station in Olympia, WA and the Forest.
4 Basically this research indicates that
5 successful hand release can be conducted
6 on red alder between the age of six and
7 ten years when it is cut between June 1
8 and August 1. Following this
9 prescription has given the Forest a
10 success rate of up to 96 per cent for
11 hand release."

12 Actually there's a footnote reference
13 there to an article entitled: Control of Red Alder by
14 Cutting.

15 MR. CASTRILLI: Madam Chair, this was an
16 updated version -- or the final version of this paper
17 was actually something I provided to Dr. McCormack
18 yesterday, and I think perhaps for the purposes of our
19 discussion it would be appropriate to introduce it now
20 as the next exhibit.

21 Q. Dr. McCormack, do you have a copy of
22 that with you?

23 DR. MCCORMACK: A. I do, yes. Thank
24 you.

25 MADAM CHAIR: That will be Exhibit 1195.

1 ---EXHIBIT NO. 1195: Final version of article
2 entitled: Control of Red Alder by
3 Cutting, produced by USDA Forest
 Service, May, 1989.

4 DR. McCORMACK: I am all set.

5 MR. CASTRILLI: Q. Dr. McCormack, I
6 wonder if I could just refer you to -- it's the first
7 page on the inside front cover.

8 A. Of...?

9 Q. The left-hand margin.

10 A. This is of 1195.

11 Q. Of Exhibit 1195, it's under the
12 heading described as Summary.

13 A. I have it, yes.

14 Q. I just want to read that into the
15 record and ask you a couple of questions with respect
16 to it. And I will again - to give everyone a break in
17 listening to my Latin - not try and say the Latin
18 phrases.

19 "Red alder competes with Douglas-fir and
20 other conifers in many young plantations
21 and natural stands. Silvicultural
22 options to reduce such competition are
23 commonly exercised on public and private
24 forestland. Until the mid-1980s,
25 herbicide applications were the primary

1 means of controlling red alder. Our
2 study designed to develop an effective
3 alternative for control, evaluated
4 effects of tree age, month of cut and
5 height and angle of cut on sprouting of
6 red alder stumps. 95 per cent or more of
7 alder stumps cut in June or July died by
8 the end of the next growing season.
9 Mortality was 88, 70 and 22 per cent for
10 stumps cut in May, August and September
11 respectively. Height, growth and numbers
12 of sprouts were also reduced by cuts in
13 June and July as compared with cuts in
14 May, August or September. Stumps of four
15 year old alder trees tended to have
16 higher survival and taller sprouts than
17 did stumps of 6 to 10 year old trees.
18 Height and angle of cutting had little
19 influence on sprouting. Red alder can be
20 controlled effectively by using cutting
21 guidelines developed from these results."
22 Dr. McCormack, were you aware of these
23 research results before I brought them to your
24 attention?

25 A. I was aware of the work, studies were

1 going on and Dean DeBell's interest in this study, Mr.
2 DeBell being the senior author of this publication.

3 Q. In particular, Dr. McCormack, I think
4 the essence of the abstract is that month of cut and
5 tree age are factors that can result in effective
6 control of competition, in this particular case red
7 alder. Is that your understanding of the essence of
8 this paper?

9 A. There are two qualifications that I
10 think need to be emphasized here. One is, this is red
11 alder, *alnus rubra*, which is beyond the understanding
12 of any of us in eastern North America as an alder.
13 This tree is of a very different form and is also known
14 to be especially susceptible or vulnerable to this type
15 of treatment.

16 It's also important to point out in terms
17 of the study reported in this publication that they are
18 only dealing with one species, so when one takes the
19 approach of considering variables, the most important
20 one reported here of timing, it is a much simpler
21 situation when you only have one species with which to
22 contend.

23 And as an outside reviewer of this
24 particular publication, I would add to the last
25 sentence: "Red alder can be controlled effectively by

1 using cutting guidelines developed from these results",
2 as far as the 1,600 alder trees which were cut in this
3 study are concerned, since it was restricted in size.

4 So one must look at this as a study
5 addressing alder in particular, but not yet extend it
6 to any kind of an operational situation.

7 Q. In other words, if I get the drift of
8 your comment, Dr. McCormack, it's that it's research in
9 progress.

10 A. And it's very restricted in terms of
11 the volume of work carried out which is reported here.

12 Q. But it does indicate that one can
13 deal with the issue of resprouting if one spends some
14 time and money on it; does it not?

15 A. In this case on red alder. This type
16 of an evaluation has been carried out on a number of
17 hardwood species across North America - some of the
18 studies I think are cited here in this paper, and going
19 back to early work of people like Karl Wenger - and we
20 can develop relationships such as those that are
21 reported here; however, as I pointed out, red alder is
22 especially vulnerable to this type of strategy and if
23 these managers were confronted with more than one
24 species - and one must consider that the timings and
25 ages can be somewhat different from one species to

1 another - it would not be possible for them to carry
2 out this manual control strategy.

3 Q. Red alder is just one of the
4 competitor species on this national forest; is it not?

5 A. It is the only woody one of
6 consequence. There is one other woody broadleaf
7 component which is mentioned in perhaps both papers,
8 it's big leaf maple which is generally just very large,
9 but single standing stems or in individual clumps and
10 it is not the type of species which spreads somewhat
11 universally across a site and it can be addressed by
12 spot treatments.

13 The other competing species that is
14 typical across these sites which is mentioned here is
15 rubus spectabilis, and you only need to look at the
16 species name to understand how it conducts itself on a
17 site, it's quite spectacular.

18 Q. I think the point though that I wish
19 your views on, Dr. McCormack, is that this is a
20 particular forest that was confronted with an unusual
21 situation that suddenly did not have herbicides
22 available to it for whatever reasons and it, therefore,
23 developed a research program to deal with that problem.

24 And would you agree with me that just on
25 the basis of this particular paper which deals with the

1 cutting of red alder, it looks like the forest in its
2 research lab are moving in the direction of a solution
3 to that problem. Would that be a fair statement?

4 A. Well, I think in part it's a fair
5 statement. I think it is typical of the type of work
6 that needs to be done. I think inherently there are
7 those conditions that need to be kept in mind.

8 The area they have treated is reduced,
9 they have a single species with which they are dealing
10 which is a unique opportunity to employ this strategy,
11 they point out higher costs, they reflect nowhere in
12 either one of these publications growth responses of
13 the crop trees, and somewhere in here, page 6 of 1194
14 the author himself states:

15 "The use of herbicides could make our job
16 more efficient in many areas and that
17 Plantation establishment is costing more
18 per acre without herbicides."

19 I think we have to recognize their
20 perspective as they deal with the problem.

21 Q. I would like to return to page --
22 sorry, I will move on to page 5 of Exhibit 1194, it's
23 Item No. 4 at the top of the page.

24 A. Yes.

25 Q. This is the fourth method by which

1 Mr. Turpin indicates that the absence of herbicides can
2 be overcome. I'll just read the entire paragraph into
3 the record:

4 "Treatment needs have also been reduced
5 because manual treatments can be confined
6 to only those acres or fractions of acres
7 that actually need treatment. Aerial
8 herbicide application has to be on a
9 broader, scale so some acres not in need
10 of treatment were being treated."

11 First of all, Dr. McCormack, do you agree
12 as a general proposition that manual treatments can be
13 confined to only those acres or fractions of acres that
14 actually require treatment?

15 A. Yes, because you have intensive
16 direction on where those treatments are applied. To
17 clarify the treatment in question, I would add, that
18 what is happening here is they are clearing by I think
19 a three-foot radius around each crop tree is the way
20 they are treating a single portion, and that is why the
21 lower number of potential crop trees that they are
22 carrying per unit of land area becomes important, they
23 have fewer spots to treat per acre as well.

24 It means that the workers must find the
25 crop tree and then conduct the prescribed treatment

1 around it.

2 Q. And the other portion of that fourth
3 method identified at the top of page 5, the author
4 indicates that:

5 "Because aerial application has be to be
6 on a broader scale, some acres not in
7 need of treatment sometimes end up being
8 spray treated as well."

9 A. Yes.

10 Q. Is that -- I'm sorry.

11 A. No, go ahead. I'm sorry.

12 Q. Is that possible in your experience?

13 A. If we are talking units of acres, and
14 he does refer to acres not in need of treatment, I
15 disagree with his statement and there is ample evidence
16 to indicate that it is not an accurate statement.

17 Q. In your experience with broad-scale
18 aerial application, you never spray a site that did not
19 require treatment?

20 A. It's not necessary. I showed in my
21 evidence in the photographs yesterday with conventional
22 equipment and no special measures, it was a relatively
23 easy matter for us to treat areas that were 2.6 or
24 approximately 2.6 acres or approximately one hectare in
25 size, and this can be done almost routinely with proper

1 aerial application equipment.

2 Thus, the reference here to spraying more
3 than is necessary when we can develop a precision that
4 is in the one to two-acre level, I think is a bit
5 misleading.

6 Q. Mr. Stanclik, in your experience in
7 the area of the undertaking that you work, can aerial
8 application of herbicides have the effect of treating
9 acres that did not require treatment?

10 MR. STANCLIK: A. We have never
11 intentionally treated acres that have not required
12 treatment. On the spray block the areas that have the
13 competition in them based on our surveys are the areas
14 that are identified for the pilots on which to conduct
15 the spray program.

16 Q. I take your point that you never
17 would intentionally spray an area that did not require
18 it. My question is: Does it happen anyway through
19 accident or otherwise?

20 A. I cannot recall in my own operations
21 of it happening intentionally or accidentally. As far
22 as areas that are free of competition, we have never
23 done that.

24 Q. Mr. Smith?

25 MR. SMITH: A. We have refined our spray

1 program to the size of the spray blocks along the lines
2 that Dr. McCormack is referring to in the two hectare
3 range as being -- that's a small block.

4 We intensively survey the areas before we
5 spray them, we have access to infrared photography,
6 they are walked, we spray them with our own helicopter
7 and they are also looked at at the time of spraying.

8 I can honestly say from my experience we
9 have not sprayed an area that didn't require spraying.

10 Q. Mr. Bunce?

11 MR. BUNCE: A. If you are asking me if
12 there are individual crop trees in an area that were
13 sprayed that did not have competition immediately
14 beside them, yes, we have.

15 If you take an area, for example, of 20
16 hectares and you do the surveys and the area generally
17 has competition, there are very few areas that the
18 competition is absolutely uniform across the complete
19 20 hectares and, yes, there may be clumps of three or
20 four trees here or there which don't have competition
21 beside them and they would be sprayed when you did the
22 blocks.

23 So if you are asking if an individual
24 tree has been sprayed that did not have a competing
25 tree right beside it, with that application method I

1 would say have to say yes.

2 But generally the blocks that are
3 sprayed, the block requires the treatment.

4 Q. I'm, sorry I don't think the reporter
5 caught the last part of your answer.

6 A. I said so if you are asking me --
7 that generally the block required the treatment;
8 however, if you are asking me if the individual tree
9 within there may not have had tree competing beside it
10 and was sprayed, that is possible.

11 Q. Mr. Ferguson?

12 MR. FERGUSON: A. I believe that the
13 areas which have been sprayed have been the areas which
14 have been prescribed for a spray. I don't believe
15 there are areas being sprayed that we did not feel were
16 in need of them. As Dr. McCormack has indicated, the
17 technology in delivery systems are such that the spray
18 can be delivered with very high precision.

19 Q. Mr. Tomchick?

20 MR. TOMCHICK: A. With the survey
21 methods that we use including ground surveys, infrared
22 photography, normal photography, individual --
23 personnel's knowledge of the area, we stratify the area
24 as best we reasonably can and all the areas that we
25 treat require a herbicide treatment. All the areas

1 that we treat with herbicide require that treatment.

2 Again, there may be within that general
3 block groups of trees or a portion of a hectare that
4 may not absolutely require the herbicide treatment in
5 order for that area to survive; however, the evidence
6 that Dr. McCormack has presented would indicate that
7 the reduction of any competition would be beneficial to
8 the crop trees.

9 Q. Dr. McCormack, can I return you again
10 to your Exhibit 1131, this is page 8 -- sorry, it is
11 your statement of evidence.

12 DR. McCORMACK: A. I have it. I am
13 learning that number, thank you.

14 Q. Some of these numbers become
15 engrained. Now, I referred you earlier to the first
16 sentence in the second full paragraph, the sentence
17 that reads:

18 "The general rule is the higher the
19 productivity of a site the more vigorous
20 and severe will be the competing
21 vegetation."

22 This is a forest with, as I understand
23 your evidence from Siuslaw, is one that has high
24 productivity and severe competition and it is, at least
25 for the period covered by the Exhibit 1194, able to

1 operate without herbicides.

2 Do you know whether the type of
3 vegetative competition in Oregon would be more severe
4 than what we would expect in Ontario?

5 A. As we've discussed, the competition
6 on the wet side there in Oregon can be severe, but as
7 described in these publications, the species which
8 compose that competition are limited and that,
9 therefore, simplifies the management of that
10 vegetation. Red alder through manual cutting is
11 uniquely susceptible to that treatment.

12 I'm not familiar with manual cutting of
13 salmonberry, the *Rubus spectabilis*, but I do know that
14 it appears worse than it is and find that in comparing
15 similar treatments and growth and development
16 information gathered by my colleagues at Oregon State,
17 gathered on salmonberry compared to our common red
18 raspberry, which is the *Rubus* species of concern in the
19 area of the undertaking, or at least the principal one,
20 that our raspberry is a much more formidable competitor
21 over the long run than salmonberry.

22 Q. Is that also true for red alder?

23 A. Well, it's impossible to compare any
24 species with red alder because its growth and
25 development and the sites it occupies are a unique

1 situation confined to the wet slopes of the Pacific
2 range.

3 Q. If we in Ontario spent the money,
4 spent the research time that has been devoted in the
5 Oregon situation to our situation in Ontario, is it
6 possible, in your view, that we could end up relying in
7 greater measure on manual treatments?

8 A. I would have reservations about that
9 because of the complexity of the competing species and
10 even though on the surface one of the largest efforts
11 devoted toward vegetative management occurs in Oregon
12 State, as one looks across the principal parties who
13 are involved in evaluating these very questions -
14 vegetation management of the species of concern here -
15 five or six names come to mind; one of whom is Robert
16 Campbell formally of Ontario Ministry of Natural
17 Resources now at the Forest Pest Management Institute
18 working with these questions for Forestry Canada, and
19 also knowing who has replaced him happens to be a
20 person with experience coming directly from the Oregon
21 State group, I think the sharing of knowledge is such
22 that I'm not sure though of us in the more easterly
23 part of the continent are that far removed from the
24 technology and I think a certain amount of this is
25 actually developing and going on.

1 Q. I'm sorry, are you aware of -- do you
2 mean Ontario?

3 A. I think as we have compared data over
4 the years that a fair amount of effort has been taking
5 place in Ontario, not as much as two or three centres
6 of activity, but whenever we look to the active
7 participants in Canada over recent years, certainly Dr.
8 Campbell is one who has been participating with us and
9 contributing information in our discussions.

10 As a researcher I should add though I
11 think there is always a place for more consideration in
12 terms of doing the research that needs to be done.

13 Q. I will direct this question to the
14 OFIA members of the panel. What knowledge or
15 information do you have about manual research -- or
16 excuse me, research into manual treatment methods being
17 sponsored or supported by your -- I should probably
18 direct this to Mr. Tomchick initially since he referred
19 to the research.

20 MR. TOMCHICK: A. I'm not personally
21 aware of any manual research and development programs.
22 I'm personally not aware of any manual -- any research
23 and development programs into manual cleaning.

24 Q. Is there anything any of the other
25 OFIA members wish to add?

1 MR. BUNCE: A. Actual research into
2 that?

3 Q. Yes.

4 A. No, I don't.

5 Q. Dr. McCormack, I would like to refer
6 you now to page 90 of your evidence. Looking at the
7 middle of the page, you indicate:

8 "In reporting on a study conducted by or
9 paper prepared by Malik and Vanden Born,
10 1986, that they recorded that the aerial
11 application of herbicides for site
12 preparation treatments has certain
13 advantages, and they suggest that..."

14 And there is an item he quotes:

15 "Carter, et al 1975 demonstrated that
16 wildlife habitat was more diverse on
17 chemically prepared sites than on
18 mechanically prepared sites in an Alabama
19 survey."

20 Let me read the whole thing into the
21 record:

22 "Depending on specific sites, herbicide
23 applications may have no physical impact
24 and may modify wildlife habitat toward a
25 favoured food species remaining."

1 There is a reference to Newton after
2 that. I'm not exactly sure what all of those
3 references do for us, but just stopping there. Is it
4 your testimony, Dr. McCormack, that wildlife benefit
5 from herbicide use?

6 DR. MCCORMACK: A. Yes, it is. I'd
7 clarify the references in that entry which you just
8 read where it makes reference to Carter and to Newton,
9 those are citations by Malik and Vanden Born and is
10 part of the quote in terms of all the citations we're
11 listing there.

12 Q. All right, fine. Thank you for that
13 clarification. Is there another view, Dr. McCormack,
14 that not using herbicides is of beneficial value to
15 wildlife?

16 MS. CRONK: Well, it behooves me, Madam
17 Chair, to actually rise. I object to that question.
18 There's at least 37 views in this room no doubt, if we
19 took a vote, about a number of things.

20 MR. CASTRILLI: Well, we don't need to go
21 very far to get an answer to that question, with
22 respect. I refer you to Exhibit 1194.

23 MS. CRONK: If it comes from an exhibit,
24 Madam Chair, that's the way it should be put to the
25 witness.

1 MR. CASTRILLI: Q. Dr. McCormack, we are
2 looking at page 5. This is under the heading of Other
3 Resources. The author indicates:

4 "The discontinued use of herbicides has
5 provided some beneficial values to
6 wildlife and has had a favourable impact
7 on the social acceptance of...", well,
8 let's not deal with that part, just deal with the first
9 part.

10 "The continued use of herbicides has
11 provided some beneficial values to
12 wildlife."

13 Let's just stop it there. The report
14 goes on to deal with five areas with respect to
15 wildlife. Let me deal with these one at a time.

16 Firstly under.

17 "a. The vegetation on harvested areas is
18 recovering much faster..."

19 Let's read the whole thing into the
20 record:

21 "...thus the areas are providing cover
22 and forage sooner. When herbicides were
23 used the regrowth of vegetation was
24 delayed for two to three years and in
25 some cases the target species never

1 resprouted. This was often the case when
2 glyphosate was used on salmonberry."

3 Let me read all of these into the record
4 and comment on them:

5 "b. A greater diversity of plant species
6 are available to wildlife. After harvest
7 and site preparation, nearly all of the
8 species on the site resprout, providing
9 more habitat and forage for all kinds of
10 wildlife.

11 c. More vegetative protection for
12 tree-eating rodents is available.

13 Habitat for brush rabbits, snowshoe hare
14 and mountain beaver has improved to a
15 great extent. The increased populations
16 of these animals have and will
17 necessitate more animal control
18 treatments at the time of planting.

19 d. Plantations will probably close
20 in...", crown closure of conifers is what
21 is meant there,

22 "...two or three years later. This will
23 provide a longer period of time for
24 usable forage for big game species."

25 And,

1 "e. Browsing is occurring over entire
2 plantations not just along plantation
3 edges. More hiding cover is available."

4 Now, would it be fair to say, Dr.
5 McCormack, on the basis of the experience Mr. Turpin
6 identifies in this forest that not using herbicides is
7 of beneficial advantage to wildlife as well?

8 MS. CRONK: Well, all the witness can do,
9 Madam Chair, is confirm that that's what this article
10 says. The article can't be tendered in these
11 circumstances for the truth of its contents, and unless
12 Dr. McCormack - and perhaps he does - but unless Dr.
13 McCormack has some personal knowledge of the author's
14 views, all he can comment on is what the article does
15 or does not say with respect to that issue.

16 MADAM CHAIR: Go ahead, Dr. McCormack. I
17 have a few questions relating to these points that I
18 would like to ask you for your opinion, but do answer
19 Mr. Castrilli's question, please.

20 DR. MCCORMACK: Well, after that
21 information I'm not sure exactly what is the
22 appropriate response for me at this time. Perhaps
23 someone could provide some guidance.

24 MR. CASTRILLI: Q. Let me just restate
25 the question, Dr. McCormack, not to put you in an

1 invidious position.

2 Does your knowledge include information
3 that confirms what is identified on page 5 of Exhibit
4 1194 that I just read into the record?

5 DR. McCORMACK: A. I'm certainly in a
6 position to comment on a few of the specifics, comment
7 specifically, and then address some of the others in a
8 general way as they relate to our experience with
9 species which are typical of the area of the
10 undertaking.

11 Q. Proceed.

12 A. Perhaps, unless if I'm out of order
13 someone can stop me, but I will try and work my way
14 down the list starting with (a), pointing out that I
15 know for a fact that salmonberry is especially
16 susceptible to glyphosate and relatively low rates will
17 control it very well.

18 In terms of where herbicides are used the
19 regrowing of vegetation was delayed for two to three
20 years, that in fact was the purpose of the herbicide
21 treatment and where it points out that vegetation is
22 recovering faster providing cover and forage sooner,
23 that synonymous with providing cover and forage is
24 providing competition for the crop trees. So there is
25 a bit of a conflict there, an objective on the part of

1 the forest manager, and I reiterate that nowhere in
2 either one of these papers do they give crop tree
3 growth data whereby we can evaluate what's going on
4 here relative to the crop trees.

5 In terms of (b) where it states a greater
6 diversity of plant species are available to wildlife, I
7 don't see a basis for comparison on this and there have
8 been observations and studies and our own observations
9 in our work that they we also seeing greater diversity
10 of plant species following herbicide application as
11 well. So I think plot comparison would be necessary
12 here to draw firm conclusions.

13 Under (c) more vegetative protection for
14 tree-eating rodents is available, and points out that
15 that requires more animal control, I guess one would
16 have to weigh the relative advantages or benefits there
17 because some of the rodents mentioned and, in
18 particular, the snowshoe hare can be a serious problem
19 in establishing conifer plantations and is in fact a
20 major reason why herbicide release is important in the
21 Province of Nova Scotia, because where they don't
22 remove that cover for the hare, they have had almost
23 entire plantations wiped out because the hare having
24 the cover to move through the plantation have clipped
25 them all off in the first or second year. So I think,

1 yes, that's probably so, but it does require special
2 animal control situations.

3 I am not prepared to comment on (d)
4 because I'm not directly familiar with the conifers in
5 question, nor do I totally understand the statement.

6 Browsing is occurring over entire
7 plantations, can be a benefit, can be a problem
8 depending on the animals which are browsing and the
9 more hiding cover is also synonymous with more
10 competition, and again we would need some information
11 on the effects on crop tree growth.

12 MR. CASTRILLI: Sorry, Madam Chair, I
13 believe you said you had a question. This might be an
14 appropriate time.

15 MADAM CHAIR: Dr. McCormack covered what
16 I wanted to address. Thank you.

17 MR. CASTRILLI: Q. Now, I understand
18 that your testimony on the use of -- I guess it really
19 appears in two places in your evidence; once in
20 relation to herbicides and tending, and once in
21 relation to insecticides and protection activities.
22 Again I'll just deal with insecticides for a moment.

23 Dr. Carrow, I think that would probably
24 be directed to you. I understand it's your testimony
25 that the use of authorized insecticides, including

1 chemical and biological insecticides in protection
2 activities is an essential and effective part of a
3 sound timber management plan -- sorry, I will give you
4 the reference, it appears several place in your
5 evidence, one place is on page 164.

6 MADAM CHAIR: Do you want to take a break
7 now, Mr. Castrilli, before you get started with Dr.
8 Carrow; is that --

9 MR. CASTRILLI: All right. Actually,
10 that would be fine. Madam Chair, I think I can advise
11 you that I should be finished today.

12 MADAM CHAIR: All right, good.

13 MR. CASTRILLI: In fact I might even be
14 finished before five.

15 MADAM CHAIR: Thank you very much, Mr.
16 Castrilli. Who is the next party -- oh, Mr. Hanna.
17 All right. We will have you ready for tomorrow
18 morning.

19 MS. CRONK: Madam Chair, just on that
20 issue, if I could take just a moment. We've had an
21 informal discussion amongst some counsel and we are
22 concerned - despite from my perspective, the good news
23 that Mr. Castrilli might finish - that we're going to
24 run into a timing problem on Friday.

25 And I wonder, should it prove necessary,

1 whether the Board would be prepared to sit late one
2 evening, either tomorrow evening or Thursday evening,
3 in an effort to ensure that cross-examination finishes
4 at a point on Friday when it will allow, if there is
5 any need for it, some potential for re-examination and
6 that we're complete by Friday. I'm concerned in light
7 of what other counsel have told me that we may not be
8 finished at the current rate.

9 I don't know how the Board feels about
10 that, nor obviously have I spoken to the witnesses
11 about it, and I appreciate that that's a very long day,
12 but I am concerned, unless Mr. Hanna arrives tomorrow
13 and revises his estimate of time that we may have some
14 difficulty.

15 MADAM CHAIR: Mr. Martel and I will
16 discuss that over the break.

17 MS. CRONK: Thank you very much.

18 MADAM CHAIR: Thank you.

19 ---Recess taken at 3:10 p.m.

20 ---On resuming at 3:30 p.m.

21 MADAM CHAIR: Please be seated.

22 MR. CASTRILLI: My apologies, Madam
23 Chair.

24 MADAM CHAIR: Before you start, Mr.
25 Castrilli, the Board discussed over the break whether

1 or not we would sit an evening session this week, and
2 we're not going to sit an evening session, we're
3 absorbing as much as we can, we're sitting almost an
4 extra week by sitting five days this week, so we're
5 going to rely on the parties to rationalize their
6 cross-examinations, do them as quickly as possible.

7 MS. CRONK: I understand, thank you.

8 MADAM CHAIR: We will inform Mr. Hanna
9 who is next on, I understand he will be here at five
10 o'clock for the scoping session, and I don't know who
11 else isn't here, I guess Ms. Kleer isn't here, and we
12 will get in touch with her as well--

13 MS. CRONK: Thank you, Madam Chair.

14 MADAM CHAIR: --and ask her to speed
15 things along as best they can because we intend on
16 rising at five o'clock on Friday.

17 MS. CRONK: Thank you.

18 MADAM CHAIR: And that will be it for
19 Panel 7.

20 MR. CASTRILLI: Madam Chair, can I just
21 have your indulgence for a moment. I am also pleased
22 to see that there's a microphone here.

23 Will we be sitting at 8:30 commencing on
24 Monday the 4th of June, or will that be at ten o'clock
25 as well. 8:30?

1 MR. MARTEL: 8:30.

2 MR. CASTRILLI: Thank you.

3 Q. Dr. Carrow --

4 MS. CRONK: Excuse me, Madam Chair, there
5 are a number of lawyers missing. If you would allow me
6 to have the matter stood down, I will go see if I can
7 find them for you.

8 MADAM CHAIR: Thank you, Ms. Cronk.

9 ---Discussion off the record

10 MR. FREIDIN: My apologies.

11 MR. CASTRILLI: Q. Mr. Carrow, before
12 the break we had been talking about the quote that
13 appears at the top of page 164 respecting the position
14 of the Industry on chemical insecticides.

15 Let me see. Mr. Stanclik, Mr. Bunce, Mr.
16 Ferguson, Mr. Tomchick and Dr. Carrow, all five of you
17 are members of the Ontario Professional Foresters
18 Association, is that correct?

19 MR. TOMCHICK: A. That's correct.

20 MR. FERGUSON: A. Yes, that's right.

21 MR. BUNCE: A. Yes.

22 MR. STANCLIK: A. Correct.

23 DEAN CARROW: A. Correct.

24 Q. And as I understand it, gentlemen,
25 that association is open to all registered professional

1 foresters in the Province of Ontario; is that correct?

2 MR. FERGUSON: A. If you're a member of
3 the OPFA you are a registered professional forester.

4 Q. By definition?

5 A. Right.

6 Q. All right, thank you. Did any of you
7 gentlemen attend this year's annual meeting of the
8 OPFA.

9 MR. BUNCE: A. I was there for parts of
10 the meeting.

11 Q. Any others?

12 MR. FERGUSON: A. (nodding negatively)

13 Q. The reporter cannot identify either a
14 nodded head or a silent response. Can you each say
15 either yes or no.

16 MR. TOMCHIK: A. No, I was at the OFIA
17 annual meeting.

18 MR. FERGUSON: A. No, I was not there.

19 MR. BUNCE: A. Yes, I was there for
20 parts of the meeting.

21 MR. STANCLIK: A. No, I was not there.

22 Q. Now, gentlemen, I've provided to you
23 a resolution arising from the meeting that took
24 place -- the annual meeting that took place in Sault
25 Ste. Marie on February 21 to 23 of 1990. Do you each

1 have a copy of that?

2 MR. STANCLIK: A. I have a copy.

3 MR. CASTRILLI: Madam Chair, I would like
4 to make this document the next exhibit.

5 MADAM CHAIR: That will be Exhibit 1196.

6 ---EXHIBIT NO. 1196: Minutes of annual meeting of OPFA
7 held in Sault Ste. Marie,
February 21-23, 1990.

8 MR. HUFF: (handed)

9 MADAM CHAIR: Thank you.

10 MR. CASTRILLI: Q. All right. Do all of
11 you have copies?

12 MR. BUNCE: A. I don't.

13 MR. TOMCHICK: A. We can share.

14 MR. CASTRILLI: All right, thank you.

15 Q. I do have an extra copy if any of you
16 need it.

17 MS. CRONK: Mr. Bunce.

18 MR. CASTRILLI: (handed)

19 MR. BUNCE: Thank you.

20 MR. CASTRILLI: Q. Gentlemen, I am
21 referring you to page 5 of the minutes of the 1990
22 annual meeting of the Ontario Professional Foresters
23 Association which I understand now is Exhibit 1196.

24 I am looking at resolution No. 4 which is
25 identified as paragraph 13.4. I would like to read the

1 preamble to the resolution and then the resolution that
2 follows:

3 "Whereas the OPFA is concerned that there
4 is increasing emphasis being placed on
5 biocontrol of pests in forestry there is
6 nothing wrong with this. The danger
7 comes in the perception that biocontrol
8 techniques are the panacea. The OPFA
9 must contribute to the prevention of the
10 spread of this perception. If chemicals
11 go so will our ability to properly
12 regenerate and protect Canada's forests.
13 Without going into the efficacy,
14 economics of arguments, we must have
15 chemicals and other means of pest control
16 in order to apply the most efficient and
17 environmentally sound method for each
18 individual situation at hand. This
19 concept is really what is sustainable
20 development is all about."

21 There followed, gentlemen, an initial
22 wording of a resolution that was put by the mover of
23 the resolution, I will just read that into the record
24 too:

25 "Therefore be it resolved that chemical

1 pesticides be endorsed by the OPFA as
2 essential and legitimate tools in the
3 regeneration and protection of Ontario's
4 forests and, therefore, an integral part
5 of sustained development in forestry."

6 Now, just stopping there for a moment. I
7 was just interested in the wording that was used by the
8 mover of the first resolution that I just read. He
9 uses the term essential and legitimate. These are
10 propositions that you agree with?

11 Again, referring to the first resolution
12 I just referred. Let me put it this way: Is it
13 consistent with the proposition that I read into the
14 record earlier from page 164 of the evidence of the
15 OFIA on chemical insecticides?

16 MR. STANCLIK: A. Yes, I agree it is an
17 essential and legitimate tool.

18 Q. All right. And what I really meant
19 to ask you is: Is the proposition that was put by way
20 of resolution, in your view, similar to the proposition
21 you have put to this Board with respect to chemical
22 insecticides? I know I should be directing this to Dr.
23 Carrow.

24 DEAN CARROW: A. I think it's consistent
25 with the statement that is given in the evidence, Mr.

1 Castrilli, on page 164.

2 Q. Now, it seems from what we have in
3 the minutes that this particular resolution was not the
4 one that was actually voted on, and what we have
5 directly below it is an indication of how the original
6 resolution that I just read into the record was in fact
7 amended, and I will just read the amendment into the
8 record. The amendment reads:

9 "Therefore be it resolved that registered
10 chemical pesticides be endorsed by the
11 OPFA as a legitimate option and tool to
12 be considered in the regeneration and
13 protection of Ontario's forests which is
14 an integral part of sustained development
15 in forestry."

16 Now, just looking at the amended
17 resolution, is that a position that the OFIA agrees
18 with?

19 MR. STANCLIK: A. It is similar and it
20 certainly can be supported.

21 Q. Is it as strong, in your view, as the
22 position that was reflected on page 164 of the
23 evidence, Dr. Carrow, the proposition that appears in
24 the top of page 164?

25 DEAN CARROW: A. The amended

1 resolution--

2 Q. Yes.

3 A. --is what you are talking about? In
4 my view it's not as strong as the statement given in
5 the evidence on page 164.

6 Q. Thank you.

7 MR. STANCLIK: A. Mr. Castrilli, maybe
8 this would be an appropriate time for us to enter some
9 documentation on behalf of the OPFA.

10 Q. Well, let's just hold on a moment.
11 I would like to deal with the remainder of the
12 resolution. You note down at the bottom of the page
13 that the resolution as amended was defeated; was that
14 your understanding?

15 MR. STANCLIK: A. That's correct.

16 Q. So that would it be fair to say that
17 a majority of the members voting at this year's OPFA
18 annual meeting February 1990, roughly three months ago,
19 were not prepared to support chemical pesticides as
20 legitimate options and tools and to be considered in
21 the regeneration and protection of Ontario's forests?

22 A. That's not true, that they were not
23 prepared to support the resolution. The resolution
24 went through a great deal of discussion and revision
25 that was presented in a very inarticulate manner, from

1 what I have been told, and that was the reason why the
2 motion was defeated. And, as I was saying, I have some
3 documentation here which will support the OPFA's
4 position on that resolution.

5 Q. Well --

6 MADAM CHAIR: Mr. Stanclik -- you can
7 enter that now, Mr. Castrilli, or we can wait until the
8 end of your cross-examination, whichever you prefer.

9 MR. CASTRILLI: Q. I just want to be
10 clear about something, Mr. Stanclik. You were not at
11 the meeting; is that correct?

12 MR. STANCLIK: A. That's correct.
13 However, I had discussions with the vice-president of
14 the OPFA who was the person handling the motions.

15 Q. Gentlemen, I'd like to see the
16 documentation before I deal with the issue of whether
17 it should be accepted or not. It can be dealt with
18 now.

19 MR. STANCLIK: A. This is a letter from
20 Mr. Saltarelli.

21 MADAM CHAIR: This is confusing, Mr.
22 Stanclik. Does it mean the whole motion was defeated
23 whether in its original form or amended?

24 MR. STANCLIK: Yes, it was.

25 MR. MARTEL: You wouldn't go back to the

1 original motion after you defeated the amended motion?

2 MR. STANCLIK: No.

3 MR. MARTEL: Why not?

4 MR. STANCLIK: It was felt the original
5 motion was inappropriate to begin with and the amended
6 motion was an attempt to try and rephrase it to a more
7 suitable --

8 MR. MARTEL: But when you defeat the
9 amended motion, how come you don't move back to defeat
10 the original motion then as presented?

11 MR. STANCLIK: I am not familiar with the
12 rules of order.

13 MR. MARTEL: I was just wondering.

14 MR. STANCLIK: But I am assuming that
15 since the motion was amended that eliminates the first
16 motion.

17 MR. MARTEL: Okay.

18 MR. CASTRILLI: Madam Chair -- sorry, is
19 there any other documentation?

20 MR. STANCLIK: This is the third piece
21 of -- third document that's referred to in that letter.
22 (handed)

23 MR. MARTEL: I was curious what procedure
24 they adopted.

25 MR. BUNCE: I was there at the early part

1 and when it first came out, it even came before this
2 one, and a motion was put forward and it was asked
3 before I think it was even into the records to rephrase
4 it or go back and there was several hours I think
5 passed before they ever got back to the motion again.
6 I was not there for the final part, but it seems quite
7 lengthy.

8 MR. CASTRILLI: Madam Chair, I'm
9 wondering if this isn't fair to the Board, there is a
10 giant document attached to this third one. I'm
11 wondering if we might stand down for a few moments
12 while I have an opportunity to review it.

13 MADAM CHAIR: Will you finished at five
14 today, Mr. Castrilli?

15 MR. CASTRILLI: In any event, I will be
16 finished by five.

17 MADAM CHAIR: All right, that's fine.
18 Ten minutes?

19 MR. CASTRILLI: Fifteen.

20 MADAM CHAIR: Fifteen.

21 MR. CASTRILLI: Thank you.

22 ---Recess taken at 3:50 p.m.

23 ---On resuming at 4:05 p.m.

24 MADAM CHAIR: Thank you, be seated.

25 Hello, Mr. Hanna.

1 MR. HANNA: Hello, Madam Chair.

2 MADAM CHAIR: I understand Mr. Martel got
3 a firm commitment from you to be finished
4 cross-examining by noon tomorrow.

5 MR. HANNA: That was not on the record,
6 Madam Chair.

7 ---Discussion off the record

8 MR. CASTRILLI: Thank you, Madam Chair,
9 for your indulgence.

10 MADAM CHAIR: You are welcome, Mr.
11 Castrilli.

12 MR. CASTRILLI: Madam Chair, I have had
13 an opportunity to look at the two documents that were
14 in Mr. Stanclik's possession.

15 Q. Mr. Stanclik, just before we deal
16 with whether this should be introduced in its entirety,
17 the large document that you gave to me which is -- it's
18 not just one document; is it, it's a series of position
19 papers from a variety of provincial forestry
20 associations in several provinces as well as --
21 including Ontario, and also a national overview
22 document.

23 I am not clear on whether OPFA has
24 adopted or supported the individual papers that were
25 produced by the individual provinces?

1 MR. STANCLIK: A. No. I just simply
2 included the other provinces because that was the way
3 the document was given to me. The OPFA supports the
4 executive summary of the larger body that those member
5 associations are a part of.

6 Q. All right. So what the OPFA
7 supported is--

8 A. So if you wish --

9 Q. --the first six pages?

10 A. Yes.

11 Q. That's the national document?

12 A. Yes. If you wish to separate out the
13 British Columbia Forester's Association and the Quebec.

14 Q. There's New Brunswick, Quebec and
15 British Columbia.

16 A. I have no problem with that.

17 MR. CASTRILLI: All right. Madam Chair,
18 why don't we proceed on that basis then. I don't have
19 any objection to the introduction of the overview which
20 is a position prepared by the Canadian Federation of
21 Professional Forester Associations which is dated
22 September, 1987 on the use of herbicides in forestry,
23 plus the - I would note in both English and French -
24 and also the OPFA policy statement concerning the use
25 of herbicides in forest management, which I don't --

1 it's the same date, Mr. Stanclik, if you know; roughly
2 September, '83?

3 MR. STANCLIK: No, I can't tell you off
4 hand.

5 MR. CASTRILLI: Well, in any event, I
6 don't have any objections to the introduction of that
7 document either, but I think in the circumstances we
8 don't need to have and it's not appropriate to have the
9 three statements from New Brunswick, B.C., and Quebec.
10 So I have no objections to that being introduced as an
11 exhibit.

12 And the other document is a cover letter
13 from Mr. Saltarelli -- sorry, N.J. Saltarelli,
14 vice-president of the OPFA dated May 14, 1990 to Mr. G
15 E. Stanclik, a witness on this panel, and attached to
16 that are two -- I'm sorry, two resolutions. I don't
17 have any objections to those being introduced.

18 MADAM CHAIR: All right, Mr. Castrilli.

19 MR. CASTRILLI: Can I have a copy --
20 these look like your originals.

21 MR. STANCLIK: Yes, they are. I believe
22 Mr. Matheson made copies for me last night.

23 MS. CRONK: I have one copy which Mr.
24 Matheson has given to me, Madam Chair, and I will
25 undertake to have copies made of the documents and made

1 available.

2 MADAM CHAIR: All right. If you need a
3 copy this evening, Mr. Castrilli, Ms. Devaul can make a
4 copy for you.

5 MR. CASTRILLI: All right. This is your
6 original; is it not?

7 MR. STANCLIK: Yes, it is.

8 MR. CASTRILLI: I'm wondering, Madam
9 Chair, whether it might be easier for me to complete
10 what is now going to be a fairly brief
11 cross-examination the first thing tomorrow morning
12 after we have these documents so everybody knows what
13 it is I'm referring to. In any event, I don't see that
14 I will be very long in the circumstances, and that
15 will, in any event, complete my cross-examination.

16 MS. CRONK: If it will help, you can have
17 this copy now. I mean, I take no objection to it.

18 MR. CASTRILLI: All right. If that's the
19 case, then I can use one copy and Mr. Stanclik can use
20 the other, and everybody else will muddle through
21 without copies.

22 MADAM CHAIR: Let's make these exhibits
23 then. The first Exhibit 1197 will be the overview
24 document and the OPFA's statement on herbicide use.

25 MR. CASTRILLI: Right.

1 MADAM CHAIR: And someone will detach
2 that from --

3 MR. CASTRILLI: The three provincial
4 policy papers that are not Ontario's.

5 MADAM CHAIR: All right.

6 MR. FREIDIN: The overview document is
7 the Canadian Professional --

8 MR. KAISER: Sorry, Canadian Federation
9 of Professional Foresters Associations.

10 MADAM CHAIR: And this is September,
11 1983?

12 MR. CASTRILLI: Yes, it is. The OPFA
13 paper does not appear to have date, as far as I can
14 tell.

15 ---EXHIBIT NO. 1197: Overview document of Canadian
16 Professional Foresters
17 Associations and Ontario policy
18 paper re herbicide use in
19 forestry dated September, 1983.

20 MADAM CHAIR: And the second exhibit will
21 be Exhibit No. 1198 which is a letter from Mr.
22 Saltarelli to Mr. Stanclik.

23 MR. CASTRILLI: Yes, that's right.

24 MADAM CHAIR: Concerning the resolution
25 at the 1990 annual meeting.

MR. CASTRILLI: Yes. The cover letter
deals with the 1990 resolution and attached to that are

1 two resolutions; one dated January 27 -- I'm sorry,
2 dated February 1, 1984 in Thunder Bay and the second
3 resolution dated January 31, 1986 in Sudbury. There is
4 actually a superfluous page attached to the second one,
5 so the second exhibit is a three-page document.

6 MADAM CHAIR: And the date of the letter,
7 Mr. Castrilli?

8 MR. CASTRILLI: The date of the letter is
9 May 14, 1990.

10 MADAM CHAIR: Thank you.

11 ---EXHIBIT NO. 1198: Three-page document containing
12 cover letter dated May 14, 1990
13 dealing with 1990 resolution with
14 two resolutions attached,
February 1, 1984 (Thunder Bay)
and January 31, 1986 (Sudbury).

15 MR. CASTRILLI: And I presume that Mr.
16 Stanclik or someone associated with him will make the
17 requisite number of copies.

18 MS. CRONK: I will, Madam Chair.

19 MADAM CHAIR: Thank you, Ms. Cronk.

20 MR. CASTRILLI: Thank you.

21 Q. Now then, let me give you back your
22 original. (handed)

23 MR. STANCLIK: A. Great.

24 Q. And if you don't mind, do you have
25 another copy of the letter and the attachments?

1 Why don't I take your copy and give you
2 back your original, and I will just ask you a few brief
3 questions about this material.

4 First of all, perhaps I can go back to
5 the resolution which is Exhibit 1196, resolution dated
6 February 23, 1990 -- the minutes of the meeting dated
7 February 23, 1990, and return to the motion and as
8 amended, or the resolution as amended and just read
9 that into the record again:

10 "Therefore be it resolved that registered
11 chemical pesticides be endorsed by the
12 OPFA as a legitimate option and tool to
13 be considered in the regeneration and
14 protection of Ontario's forests which is
15 an integral part of sustained development
16 in forestry."

17 Now, I mentioned earlier that there is --
18 I take this resolution to be dealing with both
19 herbicides and insecticides; is that a fair statement?

20 A. Yes, it says chemical pesticides.

21 Q. Okay. All right then. Now, I put
22 the proposition to you that a majority of the members
23 of the registered professional foresters of Ontario
24 voting at this year's annual meeting just three months
25 ago were not prepared to support chemical pesticides -

1 as the resolution reads - legitimate option and tool to
2 be considered in the regeneration and protection of
3 Ontario's forests, and it was at that point that you
4 disputed that proposition on the basis of the previous
5 resolutions you have now brought to our attention and
6 now constitute Exhibit 1198, and also the policy paper
7 as set out in Exhibit 1197; is that correct?

8 A. Yes, that's correct

9 Q. All right. Now, first of all,
10 dealing with Exhibit 1198, the Mr. N.J. Saltarelli who
11 was referred to at bottom of the page as author of this
12 letter, it seems to me he has been a witness at this
13 hearing; is that right?

14 A. Yes, he has, in the wood supply
15 panel.

16 Q. You state in the second paragraph --
17 or, sorry, Mr. Saltarelli states in the second
18 paragraph:

19 "In my recollection as Resolutions
20 Chairman that resolution No. 4 was
21 defeated for well-founded reasons. For
22 many, the relevance of what was being
23 moved was obscured by the resolution's
24 inarticulate and somewhat incoherent
25 rationale. Perhaps more importantly the

1 resolution appeared to be distinctly
2 biased toward advancing a single option
3 rather than an array of treatment
4 alternatives and this was considered to
5 be unacceptable by the membership."

6 Is that your position as well, Mr.

7 Stanclik?

8 A. Yes that's correct.

9 Q. Is there a system, if you will, in
10 the process by which resolutions make their way to the
11 floor of the OPFA? Do they go through some kind of
12 resolutions committee or a pre-screening process prior
13 to being produced on the floor?

14 A. They are presented to the Resolutions
15 Chairman prior to being presented on the floor and, in
16 fact, the resolution that was voted on was a second
17 revision of the original resolution, so this resolution
18 had gone through several amendment processes just to
19 try and make it acceptable for presentation on the
20 floor.

21 Q. And the concern that is identified by
22 the author of the letter in the second paragraph is
23 that, as he puts it:

24 "The resolution appeared to be distinctly
25 biased toward advancing a single option

1 rather than an array of treatment
2 alternatives and this was considered to
3 be unacceptable by the membership."

4 So what I -- well, let me put the
5 question to you. What you took to be the concern being
6 expressed by Mr. Saltarelli, which I understand is a
7 concern of yours as well, it that there was not an
8 identification that more than one -- more than the --
9 if I can put it, a chemical pesticide option was being
10 proposed and that was a concern that the membership
11 had; is that correct?

12 A. That's correct.

13 Q. All right.

14 A. It would have been better had the
15 resolution been worded to include alternate methods of
16 protection.

17 Q. And what would those alternate
18 methods of protection, in your view, had included?

19 A. It could have been to have included
20 biological controls or other non-chemical methods of
21 control.

22 Q. I see, all right. Thank you. Now,
23 just let me refer you for a moment to the first
24 resolution that's attached to what is now Exhibit 1198.
25 This is a resolution -- sorry it's resolution No. 2,

1 February, 1984. I will just read that resolution into
2 the record:

3 "Whereas the OPFA has endorsed the use of
4 approved registered herbicides and
5 has recognized the need for additional
6 herbicides for forest management, and
7 whereas the herbicide 2,4,5-T is still
8 registered in Canada and in over 30 years
9 of use in Ontario has proved to be the
10 most suitable selective herbicide
11 available to professional foresters in
12 terms of efficacy and cost, and whereas a
13 Supreme Court Judge in Nova Scotia
14 recently handed down a decision for the
15 continued use of 2,4,5-T in forestry
16 after weighing evidence from
17 international technical experts, be it
18 resolved that counsel..." Mr. Stanclik,

19 I presume that's counsel of the OPFA; is that correct?

20 A. Yes.

21 Q. "...be directed to give consideration
22 to actively pursuing a course of action
23 seeking the reinstatement of 2,4,5-T as a
24 forestry herbicide in Ontario."

25 And that resolution was carried; is that

1 your understanding?

2 A. That's correct.

3 Q. Are you aware, Mr. Stanclik, that
4 2,4,5-T is no longer registered for use in Canada?

5 A. Yes, I am.

6 Q. Is the OPFA still actively pursuing
7 its reinstatement for use in Canada?

8 A. No, it is not.

9 Q. In your view, is this resolution
10 still current then?

11 A. It is not current as of now, but at
12 the time it was relevant because only 2,4-D was
13 available to the forestry industry.

14 Q. So it was relevant at the time, but
15 it is not relevant in 1990; is that a fair statement?

16 A. That's correct.

17 Q. Thank you. Let's, to be fair, move
18 to the second --

19 A. The purpose of the resolution is to
20 identify the position of the OPFA on chemical
21 herbicides.

22 Q. Sorry, which resolution?

23 A. The purpose of these two resolutions,
24 being 1986 and 1984, is-to support the OPFA position on
25 chemical herbicides.

1 Q. All right. Let's, to be fair, refer
2 to the second resolution that's attached to Exhibit
3 1198 and -- sorry, that would be the top -- that would
4 also be resolution No. 2 at the top of the page; is
5 that right?

6 A. That's correct.

7 Q. This is January 31, 1986 in Sudbury.
8 I will just read the entire resolution into the record.

9 "Whereas competing vegetation is a major
10 factor in limiting the success of our
11 regeneration efforts, and whereas
12 foresters need a larger selection of
13 silvicultural tools to protect plantation
14 investments and increase productivity on
15 prime sites, be it resolved that counsel
16 be directed to present to the appropriate
17 politicians the need for expedient
18 registration of additional herbicides for
19 sage use in forestry."

20 Can you assist me -- sorry, and that
21 resolution was carried.

22 Mr. Stanclik, can you assist me with the
23 last phrase in that resolution, "for sage use"; do you
24 mean wise?

25 A. Wise use.

1 Q. All right, thank you. I hadn't heard
2 of sage management before and I wondered if I had
3 missed something.

4 With respect to this second resolution,
5 Mr. Stanclik, is this resolution still effective in
6 your view or active -- put it this way, being actively
7 pursued?

8 A. I believe the OPFA still endorses
9 this position.

10 Q. Now, can I take it that the policy
11 paper, which is Exhibit 1197, which is on the use of
12 herbicides in forestry in Canada and the OPFA position
13 which is set out also in the attached policy statement
14 to Exhibit 1197, these two papers are still active in
15 your understanding?

16 A. In my understanding, yes, they are.

17 Q. Now, the resolution that was defeated
18 in January of 19 -- sorry, in February of 1990 speaks
19 to both herbicides and insecticides and stated that the
20 OPFA should consider - I want to be fair - endorse
21 chemical pesticides as a legitimate option and tool to
22 be considered in the regeneration and protection of
23 Ontario's forests. Just stopping there.

24 Wouldn't it be fair to say, Mr. Stanclik,
25 that in light of that resolution which was not passed

1 by the membership, that raises some question about the
2 previous resolution from 19 -- was it '86 and also
3 raises some questions about the policy paper of the
4 OPFA in 1983, issued in 1983?

5 A. The policy paper I believe speaks
6 only with regard to use of herbicides in forestry and
7 the 1986 resolution only deals with chemical
8 herbicides, and the membership felt that more emphasis
9 should be placed on also considering alternate methods
10 of controlling vegetation and the insects and,
11 therefore, the resolution did not pass.

12 Q. Sorry, you were referring to the
13 February, 1990 resolution; is that right?

14 A. That's right. And I suspect now that
15 the OPFA's will review its position and probably come
16 out with a stronger position on alternate control
17 measures in addition to maintaining chemical
18 pesticides.

19 Q. Doesn't it also suggest, Mr.
20 Stanclik, that given the moderate language used in the
21 resolution -- proposed resolution of February, 1990
22 which says:

23 "The OPFA should endorse chemical
24 pesticides as a legitimate option and
25 tool to be considered in regeneration and

1 protection of Ontario's forests", the
2 OPFA is going to have to reconsider its policy paper of
3 1983 as well?

4 A. I don't think so. I think what
5 happened here with this resolution is that there was a
6 lot of problems with the resolution - and Mr. Bunce
7 probably can fill me in better -- or fill us in better
8 on what happened in the early stages than myself
9 because I was not there - it was just a generally poor
10 resolution that was originally conceived by a Mr. Pitt
11 and, therefore, the membership was not willing to pass
12 it in the form that it was presented.

13 Q. Well, that's clear, the resolution
14 did not pass, the resolution as presented and it also,
15 for whatever reason, didn't appear to want to even deal
16 with the earlier more strongly worded resolution
17 because it was amended to a more moderate position
18 before that more moderate position was defeated.

19 MR. CASTRILLI: Can I have one moment's
20 indulgence, Madam Chair.

21 ---Discussion off the record

22 MR. CASTRILLI: Madam Chair, if I might,
23 with your indulgence, the letter of May 14th which is
24 now Exhibit 1198 refers to an editorial by Mr. Mike
25 Rosen who is the editor of -- identified as the editor

1 of the Professional Forester and the defeat of
2 resolution No. 4 at the 1990 annual meeting.

3 I think it would be appropriate to file
4 with the Board the editorial that was referred to in
5 the first paragraph of Exhibit 1198. So with your
6 indulgence, I would like to make that the next exhibit.

7 MADAM CHAIR: That will be Exhibit 1199.
8 This is and editorial in which publication?.

9 MR. CASTRILLI: In the Professional
10 Forester dated April, 1990.

11 ---EXHIBIT NO. 1199: Editorial published in the
12 Professional Forester, dated
April, 1990.

13 MR. CASTRILLI: Q. Now, Mr. Stanclik,
14 the editorial in the Professional Forester for April,
15 1990 that gave rise to the concern that's identified in
16 paragraph 1 of Mr. Saltarelli's letter that indicates
17 you had concern about, notes in two places the
18 resolution we've been talking about.

19 The first one is in the left-hand column
20 of page 1 and as the second paragraph in which he
21 indicates that:

22 "Resolutions asking for support for
23 chemical pesticide use were voted down?"

24 And then in the last paragraph in the
25 middle column on page 1 it indicates that:

1 "Another resolution requesting the OPFA
2 to endorse chemical pesticides as
3 essential and legitimate tools in the
4 regeneration and protection of Ontario's
5 forests and, therefore, an integral part
6 of sustained development in forestry."

7 And then:

8 "With some discussion this resolution was
9 defeated by the membership."

10 I just want to be clear on the method by
11 which a resolution is killed. When I went through
12 resolution No. 4 on page 5 of Exhibit 1196 I was of the
13 view, just looking at the plain wording on the page,
14 that there was no vote on the first resolution and what
15 happened was there was an amendment to it before it was
16 voted on and defeated.

17 I'm not clear now, looking at Mr. Rosen's
18 editorial, whether in fact the process by which -- the
19 process that evolved in this particular case amounted
20 to defeat of both resolutions.

21 Can any of the OPFA members assist me in
22 how that process works, or how it worked in this
23 particular case?

24 MR. BUNCE: A. I was there for parts of
25 it but I couldn't tell you what the procedure is for

1 the OPFA. I think that you will have to ask the OPFA
2 executive what the procedure is for resolutions.

3 Q. Mr. Stanclik, you're on the OPFA
4 executive; are you not?

5 MR. STANCLIK: A. No, I'm not.

6 Q. No.

7 DEAN CARROW: A. Mr. Castrilli, if I can
8 just help on that, I think with reference to the
9 minutes of the 1990 annual meeting there is only one
10 resolution that addresses pesticides and that was
11 turned down.

12 Q. So my first interpretation is
13 correct, that it was the amended resolution only that
14 was voted and defeated -- voted upon and defeated?

15 A. That's what I would interpret from
16 the minutes and the way they are recorded.

17 Q. All right, that's fine.

18 MR. CASTRILLI: Madam Chair, those are my
19 questions.

20 MADAM CHAIR: Thank you, Mr. Castrilli.
21 Thank you, panel, you are excused for the day. Thank
22 you.

23 Do we know if -- yes, Mr. Hanna?

24 MR. HANNA: Madam Chair, I wasn't
25 prepared to start this afternoon, but if it's in the

1 interest in time, if the Board is interested, I am
2 happy to go for it. I have some questions here, not my
3 normal orderly state, but I'm certainly prepared to,
4 and again, I'm at leisure, but only because of the time
5 constraints with the panel.

6 MADAM CHAIR: Thank you very much, Mr.
7 Hanna. Yes, we would like you to proceed. Terrific.
8 You are not excused any more, witnesses.
9 Thank you, Mr. Hanna.

10 CROSS-EXAMINATION BY MR. HANNA:

11 Q. Good afternoon, panel. I was
12 expecting to say good morning, but I can change my
13 notes that much with this much notice.

14 Before I begin my cross-examination, I
15 think it is important for the panel to understand the
16 key points I will be discussing with you.

17 My questions will concentrate on one area
18 in particular of your evidence and that is the impact
19 of herbicides on wildlife habitat and other non-timber
20 values, however, before I look into that area I would
21 like to confirm the panel's view that this is the major
22 area of potential impact, and I guess perhaps Dr.
23 Carrow I will ask you a series of questions regarding
24 the impacts of insecticides and herbicides in the area
25 of the undertaking. And if any member of the panel

1 wishes to add any other views during these questions
2 or, for that matter, at any time during the
3 cross-examination, I am inviting you at this time to
4 come forward whenever the occasion arises. What I'm
5 saying is, everyone has got an open opportunity to
6 answer any questions, although I will try to focuse
7 them to one particular individual.

8 Dr. Carrow, these questions are all
9 structured very similarly, I'm going to go through
10 insecticides and then herbicides and ask you a series
11 of questions about each one, and so you will hear the
12 same structure with slightly different words in each
13 one.

14 MS. CRONK: I may be able to assist my
15 friend at the outset that the questions with respect to
16 herbicides, subject to any dispute Dean Carrow may have
17 with this, should not be put to him, he was not
18 qualified as an expert in herbicides, he was qualified
19 as an expert in insecticides.

20 MR. HANNA: I will put it to Dr.
21 McCormack, if you wish.

22 Q. This is an insecticide question, so
23 I'll put it to you, Dr. Carrow.

24 Dr. Carrow, is it your view that the
25 approved insecticides for use in Forestry in Ontario

1 pose no significant threat to terrestrial wildlife as a
2 result of direct toxic effects?

3 DEAN CARROW: A. Perhaps I could ask you
4 to be more specific as to what you mean by terrestrial
5 wildlife.

6 Q. Okay. Any vertebrate species?

7 A. Any vertebrate species?

8 Q. Yes.

9 A. Yes, it is my position that the use
10 of registered forestry insecticides, according to label
11 instructions, in the Province of Ontario do not
12 constitute an unacceptable hazard to terrestrial
13 vertebrate species.

14 Q. Would you say that your opinion has a
15 high degree of certainty or a low degree of certainty?

16 A. High.

17 Q. Is it your opinion that insecticides
18 approved for use in forestry in Ontario pose no
19 significant threat to terrestrial wildlife in terms of
20 impacts on their habitat?

21 A. Again, are we defining terrestrial--

22 Q. Yes.

23 A. --wildlife as being vertebrates?

24 Q. Yes?

25 A. Yes, that would be my position, they

1 don't pose a threat to the habitat of terrestrial
2 vertebrates.

3 Q. Does your opinion have a high or a
4 low degree of certainty?

5 A. It has a high degree of certainty.

6 Q. Dr. McCormack, I take it you are
7 familiar with the Ontario situation sufficient to
8 answer questions in terms of the application of
9 herbicides in Ontario? I know you're here as an expert
10 on herbicides in a generic way.

11 If I ask you a question you're unsure of
12 and don't feel qualified, I'll have to direct it to one
13 of the other panel members.

14 Is it your view that herbicides approved
15 for use in Ontario pose no significant threat of direct
16 toxic effects on terrestrial wildlife?

17 DR. MCCORMACK: A. Assuming the same
18 definitions apply, yes.

19 Q. Would you say your opinion has a high
20 or low degree of certainty?

21 A. High.

22 Q. Is it your opinion that herbicides
23 approved for use in forestry in Ontario pose no
24 significant threat to the habitat of terrestrial
25 wildlife?

1 A. I guess in this case I need a
2 definition in terms of your use of the word threat.

3 Q. Can there be significant negative
4 impacts associated with the use of herbicides in
5 certain circumstances with respect to wildlife habitat?

6 A. In certain circumstances there would
7 be short-term threats to habitat.

8 Q. Does your opinion have a low or high
9 degree of certainty?

10 A. With my qualification of short-term,
11 a high degree of certainty.

12 Q. And you would agree with me that the
13 potential for these types of impacts are highly
14 site-specific?

15 A. With the possibility of exceptions
16 that might depend on specific site characteristics,
17 yes.

18 Q. I'm sorry I don't follow. What do
19 you mean, the exceptions?

20 A. Well, I'm reluctant to make a blanket
21 statement relative to all sites because sites are so
22 variable that one can almost always find an exception.

23 Q. Perhaps I can read the question then
24 again to you. You would agree with me that the
25 potential for these types of impacts are highly

1 site-specific?

2 A. Okay. Yes.

3 Q. The space is not as luxurious here as
4 in the Ramada Inn, I have to improvise on this lecturn.

5 Dr. Carrow, I would like to turn to
6 Section 9 your witness statement, specifically page
7 196.

8 MR. TOMCHICK: A. That's 196?

9 Q. 196. This is the section with
10 respect to the benefits of use of pesticides in timber
11 management; correct?

12 DEAN CARROW: A. Yes, that's right.

13 Q. The basic message that I see from
14 this section and in fact the overall witness statement
15 is summarized in this section where you say that
16 pesticides work in most if not all instances more
17 effectively than other tending alternatives; is that
18 correct?

19 MS. CRONK: Mr. Hanna, that's a tending
20 question.

21 DEAN CARROW: Can you draw my attention
22 to the section you're quoting there, Mr. Hanna?

23 MR. HANNA: I hear Ms. Cronk's direction
24 to me that this is a tending question. The reason I
25 have asked these questions to Dr. Carrow is in the

1 witness statement under the directions given as to
2 responsibilities, I'm looking specifically at page --

3 MS. CRONK: I am trying to help Mr.
4 Hanna, perhaps I could put the clarification this way.
5 The page to which you referred Dean Carrow relates both
6 to tending and protection. He was qualified in a legal
7 sense to give evidence before the Board in respect of
8 protection matters, that is what his oral evidence
9 concerned.

10 My remark was made sotto voce because you
11 put the question with respect to tending and, again I
12 would ask, if that's the case, the question should be
13 put to Dr. McCormack or the Industry witnesses.

14 Dean Carrow is more than capable of
15 dealing with the protection question. This section
16 deals with both.

17 MR. HANNA: My question was with respect
18 to pesticides and the tending component of pesticides.
19 I'm happy -- I'm not going to debate this back and
20 forth as to who this section --

21 Q. I put the question to you Dr. Carrow
22 because your name had been beside Section 9. Dr.
23 McCormack if you feel that you -- or, Dr. Carrow, if
24 you feel you would have Dr. McCormack answer this
25 question, I'm happy to have you redirect it to him.

1 DEAN CARROW: A. If it relates
2 specifically to tending, I would prefer Dr. McCormack
3 to answer.

4 Q. All right. Well then, Dr. McCormack,
5 I am going to ask some questions about Section 9, if
6 you don't mind.

7 DR. MCCORMACK: A. I have Section 9 here
8 before me.

9 Q. The basic message that I see from
10 this section, and the message that I received from the
11 overall witness statement and as summarized in this
12 section, is that pesticides work in most, if not all
13 instances, more effectively than other tending
14 alternatives.

15 Is that a fair summary of the overall
16 message that comes through in this witness statement?

17 A. Yes, with the emphasis that in
18 tending it would be the category we refer to as
19 herbicides within the general group of materials
20 referred to as pesticides, yes.

21 Q. On page 197, the statement there
22 indicates that the benefits of pesticides must also be
23 considered in terms of the impacts on the environment,
24 and you conclude that:

25 "Continued use of pesticides is not only

1 necessary but is also in the best
2 interest of the environment."

3 Correct?

4 A. Again, with specific reference to
5 herbicides, the answer is definitely yes.

6 Q. These questions, perhaps to step one
7 more step back, I won't do it again - hopefully I won't
8 do it again - but I'm dealing with herbicides from now
9 on, so when I use the word pesticides it's only because
10 the word pesticides are used in the text that I am
11 continuing the term pesticides, but my questions
12 throughout this cross-examination will be directed at
13 herbicides.

14 So Dr. Carrow, perhaps you can relax and,
15 Dr. McCormack, you can get on your tippy-toes and get
16 ready to go.

17 A. I will try to be attendant, yes.

18 MS. CRONK: Sorry, that just brought
19 forth a mental image that was...

20 MR. HANNA: I think Dr. McCormack is
21 quite able to get on his tippy-toes and go like the
22 wind, so I am quite prepared to get him in that
23 position.

24 Q. Okay. So the last sentence indicates
25 on page 197, that you have concluded that approval of

1 their continued use is necessary; is that correct?

2 A. That is correct.

3 Q. In simple terms, is the question you
4 were addressing in this witness statement whether or
5 not tending, particularly chemical tending, should be
6 permitted or not; is that the question that's being
7 addressed here to a large extent?

8 A. May I read the full statement before
9 I answer, please?

10 Q. Sure. If I understood your question,
11 Mr. Hanna, the message here is that tending is
12 necessary and that herbicides are a necessary method by
13 which that tending can be carried out.

14 Q. And the gist of what you are saying
15 is, we need chemicals -- chemical herbicides in order
16 to achieve the tending that is necessary from the
17 Industry's point of view in terms of forest production;
18 is that correct?

19 A. That is the position of the Industry
20 as reflected in this statement of evidence.

21 Q. Okay. Now, I'm not going to debate
22 that any further, okay. From now on the
23 cross-examination is going to deal with rather the
24 question of when, where and how much, okay? That is
25 the question I want to deal with, not the question of

1 whether we are going to -- whether we should be allowed
2 to use it at all, but what are the circumstances under
3 which we should use chemical herbicides, okay?

4 A. Understood.

5 Q. I don't want to have to come back to
6 these things, so try and go very quickly on your
7 tippy-toes as quickly as you can.

8 A. I appreciate that.

9 Q. Okay. Does your witness statement
10 address the question of how the types of tending
11 techniques should be chosen on a site-specific basis,
12 how the tradeoffs should be made, the actual decision
13 process?

14 A. Many of the factors which compose the
15 decision-making process are summarized in the witness
16 statement.

17 Q. I am looking particularly at Chapter
18 2 which says:

19 "The choice among tending
20 alternatives..."

21 I am just looking at the table of
22 contents and I haven't, of course, read the witness
23 statement carefully and I read series of descriptions
24 of the advantages and disadvantages of the various
25 alternatives, mechanical control measures, prescribed

1 burning, et cetera, and what it is saying in some
2 circumstances here are the advantages and
3 disadvantages.

4 In fact what I asked you before, it's
5 very much a site-specific type of issue in terms of
6 what is the best technique for a specific site;
7 correct; that is what we've talked about?

8 A. That certainly is a major component of
9 making a choice between the alternatives.

10 Q. Right. And there's a decision-making
11 process that has to be gone into in terms of deciding
12 what is best for a specific site; correct?

13 A. Yes.

14 Q. This choice among tending
15 alternatives sets out the advantages and disadvantages
16 in a generic way but doesn't say specifically how you
17 would decide for a specific site in terms of making
18 tradeoffs, for example, with respect to moose browse
19 versus increased fiber production; does it?

20 A. I think the implications is those
21 types of considerations are to be made, but in the
22 interest of having an efficient document those details
23 are not included here.

24 Q. And is it your understanding -
25 perhaps Ms. Cronk will direct me if I'm not correct -

1 that this is the sort of issue to be dealt with in
2 Panel 10 when we are talking about the planning
3 process, how those tradeoffs will be made?

4 A. I'm not in a position to address what
5 is before Panel 10.

6 MR. HANNA: Ms. Cronk, perhaps in the
7 interest of time, and rather to proceed on this,
8 proceed on questions that aren't appropriate for this
9 panel, are those the types of questions that I should
10 put to Panel 10?

11 MS. CRONK: Anything relating to planning
12 matters should be put to Panel 10.

13 MR. HANNA: Including tradeoffs among
14 different values?

15 MS. CRONK: Well, my difficulty is I
16 don't know where you want to go with your questions,
17 Mr. Hanna, and you and I have had this visit before.

18 Anything in relation to planning in the
19 Industry's perspective on when planning should occur
20 are matters that should be dealt with in Panel 10.

21 MR. HANNA: Well, that's been my
22 assumption. I think the kind of question I am talking
23 about is a Panel 10 issue, so I will leave it for them.

24 Q. Now, Dr. McCormack, does your witness
25 statement address the question of how short and

1 long-term implications of tending operations on
2 wildlife should be predicted?

3 DR. McCORMACK: A. As to how they should
4 be predicted, I think this aspect of the subject is not
5 considered other than the implication that it should be
6 considered.

7 Q. That was my understanding also, I
8 just wanted to make sure there wasn't something I
9 missed.

10 Now -- well, perhaps you've just answered
11 this. You agree that the short and long-term
12 implications of tending on wildlife and other forest
13 values should be considered in selecting the tending
14 method for a specific site?

15 A. Yes, I do.

16 Q. And do you agree that this can only
17 be effectively analysed on a case-by-case approach when
18 a specific tending proposal is being advanced?

19 A. I think that one is a little more
20 difficult, Mr. Hanna, because it would depend on the
21 specifics. I think that where common conditions and
22 organisms are involved and there is information which
23 is sufficient to guide managers who are evaluating the
24 situation, that in such evaluations perhaps a
25 case-by-case appraisal would not be necessary.

1 Q. Dr. McCormack, would it be fair for
2 me to interpret from what you are saying is that there
3 are generic relationships that could be used to analyse
4 wildlife responses and other non-timber responses that
5 would be generic and not necessarily -- you don't have
6 to develop that every time; is that what you're
7 suggesting to me?

8 A. I think that is the usual procedure
9 within a scientific community.

10 Q. And once you have those, I call them
11 tools, once you have those sort of tools to assist you
12 in management, you would then apply them on a
13 case-by-case approach because each approach is going to
14 have differ densities of wildlife, different habitat
15 configurations, different users, different objectives?

16 A. Were those individual cases evaluated
17 by professionals and they had sufficient information, I
18 think that would be a reasonable procedure and actually
19 what takes place many times.

20 Q. Now, does your witness statement
21 provide direction on how the short and long-term
22 implications of tending on wildlife should be evaluated
23 as opposed to being predicted? Do you understand what
24 I mean by evaluated in that context?

25 A. Perhaps you could elaborate there for

1 me, please.

2 Q. Evaluated, I am referring to weighing
3 the benefit of, say, or the costs of, say, increased
4 fiber production versus increased production of
5 recreational opportunities, increased biological
6 diversity, the actual, what I call societal weighing
7 process that you are actually -- here's what we are
8 trading off, now how much weight are we going to put on
9 each one.

10 Does your witnesses statement address
11 that in any way?

12 A. I think, as I understand your
13 question, Mr. Hanna, it addresses the possibility of
14 assigning priorities to these various non-timber values
15 and I would put that more into a decision-making
16 process whereby such priorities are established, and
17 I'm a little uncomfortable with addressing that.

18 Q. Well, again, I'm simply asking - this
19 is for clarification - your witness statement doesn't
20 deal with that issue, that is something that has to be
21 dealt with through the decision-making process?

22 A. That's--

23 Q. That setting of priorities.

24 A. --my feeling, yes.

25 Q. So in conclusion, then, the witness

1 statement attempts to address the question of whether
2 or not chemical tending should be permitted,
3 particularly chemical tending, and the question of how
4 much, when and in what circumstance is something that
5 you would expect to be addressed through the timber
6 management planning process?

7 A. My hesitation centres around your use
8 of the word permitted. I think in our witness
9 statement we address tending alternatives, how choices
10 are made among those alternatives, how the tending
11 alter -- the factors involved in carrying out those
12 tending alternatives and then the growth responses, but
13 the permitted part is --

14 Q. Perhaps I can just explain to you
15 what I mean by permitted. One of the options that I
16 believe this Board might contemplate would be saying:
17 No chemical tending in the area of the undertaking,
18 that would be an alternative they might consider, and
19 so in that sense I meant permitted, that this Board --
20 one of the questions that this Board might have in
21 their mind is: Should we have chemical tending at all,
22 and I am saying that one of the things that your
23 witness statement has addressed is whether or not this
24 should be permitted or not and, as I understand it, the
25 conclusion your witness statement has come to is that

1 this panel is of the view that it should be permitted.

2 A. I think the view expressed in this
3 statement of evidence is that it is essential to
4 satisfy the timber management needs of the OFIA
5 members.

6 Q. Right. And the question of, again,
7 how much, when and in what circumstances, that will be
8 addressed through the timber management planning
9 process through individual timber management plans,
10 that's your understanding.

11 A. Certainly the 'how much' part would
12 be considered at that level.

13 Q. Dr. McCormack, your name was beside
14 Section 3, am I fair in asking you questions about
15 Section 3?

16 DR. MCCORMACK: Yes.

17 MADAM CHAIR: Mr. Hanna, would you like
18 to continue for a few minutes or would you like to stop
19 now so we can do the scoping session.

20 MR. HANNA: Actually, Madam Chair, there
21 is going to be - what I have got here - six questions
22 on this topic and it may help me in terms of preparing
23 for tomorrow to have these answers. I expect this will
24 only be four or five minutes, though, and I'll be
25 finished.

1 MADAM CHAIR: Go ahead.

2 MR. HANNA: Q. Now, Dr. McCormack, I am
3 focusing here on page 85 to the summary in the
4 boldfaced type and particularly Section B, and even
5 more I am focussing in on the term cost effective,
6 okay. Can you define for me what you mean by cost
7 effective in this context?

8 DR. MCCORMACK: A. This question has
9 arisen earlier in these proceedings and was included
10 in -- at least in earlier interrogatories.
11 Cost-effective in this case refers to what is
12 affordable.

13 Q. Yes, I have read that interrogatory
14 response. Unfortunately, perhaps it didn't quite
15 answer the question I had in my mind, and I will put it
16 to you like this: Is not a fundamental principle of
17 cost-effectiveness that a clear objective or end point
18 has already been established and cost-effectiveness is
19 a means to evaluate alternatives to achieve that
20 specific end?

21 A. As I understood the statement, I
22 would agree with that.

23 Q. If you want I will read it again to
24 you, but if you're comfortable --

25 A. I guess I would prefer that you read

1 it again so we both can be sure.

2 Q. Sure. I like to be sure about these
3 things. Is a fundamental principle of
4 cost-effectiveness that a clear objective or end point
5 has already been established and cost-effectiveness is
6 a means to evaluate alternatives to achieve that
7 specific end?

8 A. I still agree with it, yes.

9 Q. Good. Does cost-effectiveness not
10 imply that an evaluation of the benefits and costs or
11 advantages and disadvantages of alternative end points
12 has been completed and a decision made as to the best
13 alternative?

14 A. With the qualification that sometimes
15 managers must make decisions with the best information
16 available and there is pressure on them to make those
17 decisions, yes.

18 Q. What you are saying to me is
19 sometimes an elaborate comprehensive three-year
20 benefit/cost analysis might not be done, but in any
21 event the manager would weigh advantages and
22 disadvantages in either -- with whatever degree of
23 explicitness and rigor that was appropriate for the
24 circumstances?

25 A. Certainly to the best of his or her

1 ability at the time, yes.

2 Q. Okay. And the key thing is that that
3 has to take place to decide upon the alternative; once
4 the alternative is established, then we kick into
5 cost-effectiveness mode. You see the two steps that I
6 am -- the differentiation?

7 A. I follow your line. I'm still
8 agreeable.

9 Q. Good. So is it fair in interpreting
10 this witness statement to say that it's implied that on
11 a case-by-case basis specific objectives for an area to
12 be treated must first be decided and then the choice of
13 tending alternatives should be made within a
14 cost-effectiveness framework?

15 A. I think that's very much the way the
16 feeling of Industry is expressed in this statement of
17 evidence.

18 Q. Dr. McCormack, if we keep going at
19 this rate, I might be able to make Mr. Martel's
20 commitment by noon tomorrow.

21 MR. HANNA: That's it for this evening,
22 and I will be ready to go at 8:30 tomorrow morning.

23 MADAM CHAIR: Thank you very much, Mr.
24 Hanna for showing up early and starting your
25 cross-examination.

1 Good evening gentlemen. Thank you very
2 much.

3 --- (panel withdraws)

4 MADAM CHAIR: Who is here for the scoping
5 of Panel 10. Mr. Cosman? Mr. Huff, are you here for
6 Forests for Tomorrow.

7 MR. HUFF: Yes.

8 MR. FREIDIN: Has Ms. Devaul contacted
9 Ms. Kleer to advise her that perhaps she should be here
10 by noon tomorrow or by early tomorrow afternoon?

11 MADAM CHAIR: We will remind Ms. Devaul
12 today.

13 MR. FREIDIN: Thank you.

14 MADAM CHAIR: Also the Board will be back
15 in five minutes, I left my documents in --

16 --- Recess taken at 5:05 p.m.

17 --- On resuming at 5:25 p.m.

18 MADAM CHAIR: Please be seated. All
19 right, we are waiting for Mr. Hanna, he's on the
20 telephone, he was following us out.

21 MR. FREIDIN: Before we get started, can
22 someone advise whether a statement of issues was
23 received from Forests for Tomorrow?

24 MR. COSMAN: For Panel 10?

25 MR. FREIDIN: Yes.

1 MR. COSMAN: Yes.

2 MADAM CHAIR: Yes. I take it you don't
3 have that, Mr. Freidin?

4 MR. FREIDIN: Well, I don't have my copy
5 here.

6 MADAM CHAIR: Well, let's go through the
7 ones we do have. One arrived from the Ontario Metis
8 and Aboriginal Association.

9 MR. COSMAN: We have not seen that.

10 MADAM CHAIR: Just.

11 MR. COSMAN: Oh, just.

12 MADAM CHAIR: We will get a copy for
13 that. We will make copies for you now.

14 MR. COSMAN: Thank you.

15 MADAM CHAIR: We have a statement of
16 issue from the Ontario Federation of Anglers & Hunters.
17 Forests for Tomorrow, the Ministry of the Environment,
18 Ministry of Natural Resources, and NAN.

19 MR. COSMAN: For some strange reason,
20 Madam Chair, we have all but the Ministry of the
21 Environment.

22 MADAM CHAIR: All right. So if you want
23 a copy of that one too, Mr. Cosman?

24 MR. COSMAN: I won't take your time now,
25 but I will get it from your assistant.

1 MADAM CHAIR: All right. Mr. Cosman,
2 take my copy and Mr. Martel and I can get another copy
3 easily. (handed)

4 MR. COSMAN: Thank you.

5 MADAM CHAIR: You're welcome. .

6 Hello, Mr. Huff. We just went through
7 the number of statements of issues that we have. I
8 don't know whether you have a complete set or not.

9 MR. HUFF: I have none with me, I am
10 merely filling the breach.

11 MADAM CHAIR: The Board has very few
12 questions of clarification about the witness statement.
13 We have been familiar with this material for a long
14 time and with your overview, questions were asked at
15 that point, and reference has been made every day to
16 the Industry's terms and conditions and various aspects
17 of planning, but we did have three small points to
18 make.

19 The first being, we were asking: On page
20 31 you talk about a review taking place on July the 1st
21 to the 15th of July - this appears on page 31 - and we
22 are talking about the timber management plan author
23 making available to the public various information
24 beginning July the 15th.

25 And our question was simply: Is it a

1 ... good idea in the middle of the summer to have a public
2 session like that, and presumably there are arguments
3 in favour of doing that and arguments that might not
4 favour that time.

5 MR. COSMAN: I will ensure that that is
6 addressed, Madam Chair.

7 MADAM CHAIR: Thank you. A second point
8 is with respect to appointing members to the local
9 citizens committee, and that was raised in several of
10 the statements of issue and the Board would like a
11 clarification of how that would be done.

12 And a final request from the Board with
13 respect to leading the evidence-in-chief, we would like
14 to have it clearly outlined for us where the
15 differences are between what the Industry is proposing
16 with respect to the planning process and the Ministry
17 of Natural Resources' proposal.

18 MR. FREIDIN: I was going to do that if
19 you didn't, Madam Chair.

20 MADAM CHAIR: Mr. Cosman?

21 MR. COSMAN: Yes, Madam Chair.

22 Do we have any indication as to the
23 length of time from the various parties? Perhaps we
24 can get that at this time.

25 I have it informally from some people but

1 it might be helpful in terms of your own scheduling,
2 scheduling of other parties and scheduling of
3 witnesses.

4 MADAM CHAIR: Yes, let's make a schedule
5 now.

6 MR. COSMAN: I will be a full two days in
7 chief, given the differences that we have to point out,
8 plus the evidence that we will be calling to address a
9 number of questions that have arisen both in the
10 evidence and arising from the terms and conditions of
11 other parties. So my evidence-in-chief will be two
12 days.

13 MADAM CHAIR: All right. Ms. Harvie?

14 MS. HARVIE: Yes. Ms. Seaborn who will
15 be conducting the cross-examination advises me that she
16 will be at least one full day in cross.

17 MADAM CHAIR: Mr. Freidin?

18 MR. FREIDIN: Two and a half days.

19 MADAM CHAIR: Mr. Hanna?

20 MR. HANNA: Madam Chair, in our covering
21 letter we indicated we will take approximately two
22 hearing days.

23 MADAM CHAIR: Mr. Huff, do you have any
24 idea?

25 MR. HUFF: I am afraid that I will have

1 to get you that information early tomorrow. I will
2 phone Ms. Devaul and --

3 MADAM CHAIR: It would be helpful to have
4 it early. Thank you.

5 MR.. HUFF: I know it would be.

6 MADAM CHAIR: Well, we're at least two
7 weeks.

8 MR. COSMAN: Yes. I think that's where I
9 was concerned we might end up when I spoke to parties
10 informally, Madam Chair.

11 The difficulty that we face in terms of
12 scheduling is that on my estimate, having spoken to my
13 colleagues of the panels that remain - in fact we're
14 getting close to the end - but 9A will be, I believe
15 with evidence-in-chief, five days; 9B evidence-in-chief
16 and cross-examination will be three days, for total of
17 eight days before Panel 10, that takes us until the
18 last week of the month, so that the question that -- we
19 very much wanted to finish by the end of the month but
20 it just seems impossible with the scheduling that there
21 is.

22 The real problem is that it is difficult
23 and unfair for you, and particularly for witnesses, to
24 be left under cross-examination, split a
25 cross-examination and leave them over the entire summer

1 break before we start again.

2 So I don't know about the alternative of
3 time. I think we have one week in August in which I
4 think OPFA is scheduled to sit, that's for two days.

5 MADAM CHAIR: That's the week of August
6 the 13th?

7 ** MR. COSMAN: Yes. So there is a
8 possibility of -- let's say there were two weeks -- two
9 full weeks here, just judging without knowing Forests
10 for Tomorrow, it may be - and perhaps what I will do is
11 I will canvass the parties and come back to you with
12 some concrete proposal - but it may be advantageous for
13 a number of reasons, rather than to start for two or
14 three days then have another two days in August, given
15 the breaks and the impact on witnesses and the effect
16 on the evidence, but to have our evidence -- our last
17 panel commence right after the various scheduled visits
18 in the fall, August and September, prior to the Forests
19 for Tomorrow case; one advantage being is that we will
20 have received the Forests for Tomorrow evidence
21 packages and, to that extent, would be able to address
22 any planning issues arising from those evidence
23 packages in addressing our final panel which would -- I
24 mean, would be one advantage if that were done.

25 The alternative would be that we're going

1 to be likely to do it for two or three days in that
2 final week -- two days in the week of August and two
3 days or three days, in any event at the end of
4 September or the beginning of October.

5 Perhaps if you would leave it with me,
6 and I'll canvass my friends to see if there's some
7 other way of handling it, but it looks like we're going
8 to be completing this month, or a good chunk of it - if
9 all is on schedule, according to your present plans -
10 up until the end of May (sic) 25th in any event on the
11 present panel's that are before you.

12 The alternative would be that we are
13 going to be likely doing it for two or three days in
14 that final week, two days in the week of August and two
15 days or three days, in any event, at the end of
16 September or beginning of October, but perhaps if you
17 would leave it with me and I will canvass my friends to
18 see if there is some other way of handling it, but it
19 looks like we are going to be completing this month or
20 a good chunk of it if all is on the schedule according
21 to your present plans up until the end of May 25th, in
22 any event, on the present panels that are before you.

23 MR. HANNA: Madam Chair, through you I'd
24 ask Mr. Cosman - my math is usually not as good as
25 his - but I was interested in how we ended up not

1 having time in June. When were we planning on rising
2 in June?

3 MADAM CHAIR: What's the last Friday?

4 MR. MARTEL: The 28th. Thursday is the
5 28th.

6 MADAM CHAIR: Thursday is the 28th.

7 MR. HANNA: And we are sitting three or
8 four days during the month of June?

9 MADAM CHAIR: We have three day
10 scheduled.

11 MR. MARTEL: We actually sit three days,
12 but in fact it's a four-day schedule because we are
13 sitting as many hours in three days as we sit in four,
14 as most Boards sit in four.

15 MR. HANNA: It is just that I certainly
16 appreciate what Mr. Cosman is saying, I can see from
17 his point of view having the advantages of FFT's
18 package so he can have an opportunity to respond to
19 issues that were brought forward.

20 I'm just looking at it from the other
21 side and that is, I think the satellite hearings --
22 there is quite a bit of interest in the hearings in
23 terms of what the forest industry is proposing and I
24 think there might be some advantage if that has been
25 presented, but I'm easy either way.

1 It's just that I'm more concerned about
2 the moving along with this as quickly as possible. If
3 there is any way we can get it in June, I certainly can
4 assure you that my client would assist the Board in any
5 way possible.

6 MR. COSMAN: I can assure that was
7 certainly our intention as well, and the question
8 arises because of the fact that on the two weeks we
9 have from the parties in terms of the time that they
10 are going to take, it is not going to be completed in
11 June. That is the problem, the problems arises from
12 the fact that it is not going to be completed in June.

13 MR. HANNA: Well, Madam Chair, I would
14 say that I would support Mr. Cosman, that it's
15 certainly not fair to any witness to be in
16 cross-examination over the summer period.

17 So I agree with him totally that we
18 shouldn't split the panel if it comes to that.

19 MR. FREIDIN: Madam Chair, am I to take
20 it from the comment from Mr. Martel that the Board does
21 not look favourably at the moment of sitting more than
22 three days a week if there is a possibility of
23 squeezing Panel 10 in in June?

24 MADAM CHAIR: Well, the Board hasn't
25 looked at that. Now that it has been brought to our

1 attention we will discuss it.

2 MR. FREIDIN: I am just wondering if it
3 is worth our discussing that with Mr. Cosman as being a
4 possible alternative. I'm looking at my time, I might
5 even be -- I'll see if I can cut my time from two and a
6 half days down a little bit and get it in in June,
7 because that's certainly the preference of the
8 Ministry.

9 MADAM CHAIR: Well, it's certainly the
10 preference of the Board that we would finish.

11 MR. COSMAN: It's our preference too of
12 course.

13 MADAM CHAIR: You will go and canvass all
14 the parties for us.

15 MR. COSMAN: Yes.

16 MADAM CHAIR: And find out what they're
17 prepared to do and discuss the cross-examination
18 schedule with them.

19 MR. COSMAN: Will do.

20 MADAM CHAIR: And look very carefully at
21 the days you would expect to be in examination-in-
22 chief and see what we can do, and the Board will
23 discuss its hearing schedule.

24 MR. MARTEL: Well, I was trying to
25 respond to Mr. Freidin. I learned a long time ago that

1 the more time you give people, Mr. Freidin, the longer
2 it takes and if push comes to shove, that it's
3 surprising how much of the important material you want
4 to get in when push comes to shove, but if you expand
5 the time then, in fact, the time is simply taken up the
6 allowed expansion and, consequently, I am who favours
7 setting a timetable and hanging to it because you're
8 going to get it done in that time, whereas you wouldn't
9 the other way. And that's 20 years of experience.

10 MR. HANNA: Is that Martel's Law?

11 MADAM CHAIR: That's Mr. Martel's amoeba
12 theory of it.

13 MR. MARTEL: Yes.

14 MR. COSMAN: Well, if it can be done, of
15 course that would be everybody's preference, but there
16 would be nothing worse than splitting it.

17 MADAM CHAIR: The Board hears what you
18 are saying, to start it with no hope of completing at
19 the end of June would not be beneficial.

20 MR. COSMAN: It may be advantageous to
21 see how the other panels develop, that's another thing.
22 Sometimes they tend to be shorter; sometimes they tend
23 to be the other way.

24 With a little pushing from Mr. Martel
25 maybe it will be shorter.

1 MADAM CHAIR: Do you have anything else
2 you want to discuss Mr. Cosman with the parties?

3 MR. COSMAN: That's all.

4 MADAM CHAIR: Do the parties have
5 anything to ask Mr. Cosman about the panel?

6 Mr. Freidin?

7 MR. FREIDIN: Just one matter of
8 clarification. The schedule which was issued by the
9 Board did not have any sitting days in the last week of
10 June. I take it from your comments that we will sit
11 the last week of June?,

12 MR. MARTEL: We just thought we were
13 going to be done by then.

14 MR. FREIDIN: And can I take it we will
15 not sit on the Friday, when I'm flying to Calgary.

16 MADAM CHAIR: We might be sitting here,
17 Mr. Freidin. I don't know. As it is scheduled now we
18 won't be.

19 MR. FREIDIN: Thank you.

20 MR. COSMAN: Subject to any further
21 directions I can tell my witnesses to at least be
22 prepared to be in the box from the 25th to the 27th.

23 MADAM CHAIR: The 25th is your estimate
24 given the worse -- given the slowest schedule for
25 Panels 9A and B.

1 MR. COSMAN: Given the present estimate,
2 based on the other scoping sessions and what the
3 parties have indicated, we would be starting our
4 evidence on the 25th?

5 MR. FREIDIN: No, not if the Board agrees
6 to sit four days a week, we would start your Panel 10
7 on the 18th of June.

8 MR. COSMAN: Well, that is -- certainly
9 if the Board sits an additional day in each of the
10 previous two weeks, it would be then mid-week in the
11 18th rather than the 25th.

12 MADAM CHAIR: If we sit five days and
13 five nights...

14 MR. FREIDIN: I'm working anyway, lights
15 on.

16 MADAM CHAIR: Mr. Martel points out to me
17 until June the 15th there isn't an extra day the Board
18 can fit in, from the 15th to the 28th there may be.
19 Mr. Martel and I will go over that.

20 MR. MARTEL: We will go over ours and
21 hopefully the lawyers will sit down and go over theirs
22 and consult and see at that time.

23 MR. COSMAN: We will be ready to go
24 whenever you decide.

25 MR. HANNA: Madam Chair?

1 MADAM CHAIR: Yes, Mr. Hanna?

2 MR. HANNA: If that deals with the
3 scoping session, there is one other matter that I would
4 like to address the Board on.

5 MADAM CHAIR: We are finished with the
6 scoping session.

7 MR. HANNA: Madam Chair, at the satellite
8 hearing in Fort Frances a particular issue arose that I
9 would like to get the Board's direction on.

10 I would simply like to put on the record
11 at this time and perhaps we can set aside the time to
12 deal with it, when the Board feels appropriate. I will
13 just give you a bit of background as to what it has to
14 deal with.

15 In Fort Frances you've heard through
16 various witnesses that spoke to you about a matter
17 called the Loonhaunt Road and a committee that was set
18 up by the local district of the Ministry of Natural
19 Resources to deal with that particular proposal.

20 My client was quite encouraged and
21 involved in that exercise, and it is our understanding
22 that a key player in the development of the committee
23 and the actual implementation of it was the local
24 district manager - a name that you have heard before -
25 Tim Taylor.

1 Mr. Taylor was at the satellite hearing
2 session and I had a discussion with other counsel about
3 the possibility of having Mr. Taylor provide to the
4 Board at that time a further explanation of the
5 planning process that led up to that particular
6 proposal and to provide the Board with his views as to
7 how that system worked and how he might change it in
8 the future. It was on short notice and for various
9 reasons that proposal did not go forward.

10 The matter that I wish to raise to the
11 Board and to get your direction on at some point is:
12 There was an indication given to me by certain counsel
13 that they interpreted the ruling that the Board
14 recently made in terms of the conduct of the satellite
15 hearings that no Ministry of Natural Resources
16 witnesses could be called during the satellite
17 hearings.

18 My interpretation was different. My
19 interpretation was that the Board's ruling was that the
20 process whereby there was a panel of Ministry witnesses
21 permanently in place during the satellite hearings who
22 would respond to various submissions was deemed
23 inappropriate and that was the ruling the Board made,
24 and I was of the understanding the Board made no ruling
25 as to whether or not Ministry witnesses could come

1 forward and speak individually during the satellite
2 hearings.

3 That's the first matter I would like to
4 have clarified in terms of procedures in future
5 satellite hearings.

6 The second matter that arises out of that
7 is, my client is quite interested in the possibility of
8 having Mr. Taylor appear as a witness at some point
9 before these proceedings are over. Obviously he is an
10 employee of the Crown, of the Proponent, and that
11 raises the issue of calling what will ostensibly be a
12 hostile witness, although I can assure from my dealings
13 with Mr. Taylor he is not at all a hostile person - but
14 that unfortunately is the circumstance we're under, and
15 I would like to get the Board's direction at some point
16 in terms of how we deal with hostile witnesses in terms
17 of witness statements, procedures in terms of calling
18 them and whether in fact it is appropriate to call --
19 for other parties to call Ministry witnesses.
20 Certainly, and I am limiting myself here to witnesses
21 the Ministry has not itself seen fit to call up to this
22 point.

23 The third matter that arises out of that
24 that I would also like to get the Board's direction on
25 is that - I haven't canvassed other counsel and perhaps

1 they can direct me on this - but that is the priority
2 of oaths.

3 MR. FREIDIN: What?

4 MR. HANNA: The priority of oaths. As
5 you know, civil servants take an oath when they come
6 into the civil service, also when you come -- are
7 called before this Board you take an oath and there may
8 be situations where those two oaths are conflicting; to
9 tell the whole truth and nothing but the truth and also
10 to reserve -- to not reveal certain things as part of
11 your civil service oath.

12 And I wish to get clarification as to
13 which oath takes priority if I was to call a hostile
14 witness.

15 I don't wish to have it dealt with now at
16 this time, Madam Chair, I wish to merely put them on
17 the record and I am at the Board's leisure as to when
18 those should be dealt with.

19 MADAM CHAIR: Thank you, Mr. Hanna.

20 Do you want to bring this as a motion for
21 discussion with all the parties before the Board?

22 MR. HANNA: If we have to go through a
23 formal procedure, I am prepared to bring a motion
24 forward, I'm happy to bring forward simply a verbal
25 motion and to deal with it that way.

1 I was hoping it wouldn't have to be that
2 formal of a procedural matter, but if other parties
3 feel that that's the appropriate route to go, I am
4 certainly prepared to go that route.

5 MADAM CHAIR: Well, I think if you simply
6 write a letter to the Board and say you want to talk
7 about these three issues, then we will set a time to do
8 that. We can set a time now.

9 Have you talked to the counsel about
10 these matters, Mr. Hanna?

11 MR. HANNA: No, I haven't. And, as I
12 say, that's one of the things I'm certainly prepared to
13 canvass the other counsel.

14 MADAM CHAIR: Why don't you do that first
15 and if you can come to some agreement among the parties
16 about what can be done on these three matters, then the
17 Board will listen to that; and, if you can't, then we
18 will set aside a day and hear...

19 MR. HANNA: Madam Chair, I would just say
20 that I did in fact canvass on the first issue, the
21 clarification issue, that's what arose out of the Fort
22 Frances hearing and that's why I have come before the
23 Board.

24 The other matters I brought simply really
25 as ancillary to that issue. That was, as I say, at the

1 Fort Frances hearing I actually canvassed other counsel
2 and indicated I wished to have Mr. Taylor, if you will,
3 tell a story and they were under the view that that
4 would contravene the Board's order, so...

5 MADAM CHAIR: You wanted to do that while
6 we were at Fort Frances?

7 MR. HANNA: Yes, I did.

8 MADAM CHAIR: Well, my first reaction --
9 I'll have to look at the ruling again more closely. My
10 first reaction is that it covered all evidence from MNR
11 witnesses, that we simply wouldn't have witnesses from
12 MNR or any other party give formal presentations at
13 public hearings.

14 Yes. Mr. Martel reminds me we had the
15 local district manager at Dryden present and his
16 presence was objected to as well as the other MNR
17 witnesses who were there.

18 So I think my first reaction is, it
19 stands, we wouldn't have any formal presentation by the
20 Ministry of Natural Resources, nor would they ask
21 questions formally at the satellite hearing. I will
22 look more closely into that.

23 MR. HANNA: Madam Chair, just for the
24 record, I would like it to be clear that my client did
25 not object to the Ministry -- local Ministry

1 representatives making submissions at the satellite
2 hearing; what my client objected to was having a
3 Ministry panel there present during other people's
4 evidence, other individuals coming forward and counsel
5 for MNR then asking questions to that panel in response
6 to evidence that was given by individuals and just so
7 the record is clear, that's what I was objecting to on
8 behalf of my client and not MNR individuals coming
9 forward as local people involved in timber management
10 and giving their views.

11 Now, obviously MNR might have views as to
12 whether or not they want to have those people speak,
13 but certainly it wasn't something my client objected
14 to.

15 MADAM CHAIR: Thank you, Mr. Hanna.

16 MR. FREIDIN: Madam Chair, can I take it
17 then that you are going to review the ruling and then
18 indicate whether you would even entertain a review of
19 that particular matter?

20 MADAM CHAIR: Yes, but I don't think that
21 answers the other two points Mr. Hanna has raised.
22 But, yes, we will.

23 MR. FREIDIN: In relation to the other
24 two, I should just indicate my initial reaction is that
25 both of those issues are issues which perhaps are

1 academic and shouldn't be dealt with by the Board in
2 the air, that there are procedures that Mr. Hanna has
3 at his disposal to call witnesses and if witnesses are
4 hostile that is a matter which must be determined by
5 the demeanor of the witness in the box and the Board
6 then has certain legal parameters within which it can
7 deal with that.

8 If it is not done sort of at the time,
9 we're dealing with a purely academic situation and end
10 up rewriting the text of hostile witnesses and things,
11 and I think that's an exercise --

12 MADAM CHAIR: So you are saying there's
13 nothing to prevent Mr. Hanna from calling Mr. Taylor as
14 a witness in his case?

15 MR. FREIDIN: Well, there are avenues
16 that he can pursue and I don't think it is a matter of
17 the Board providing Mr. Hanna will all of the ins and
18 outs of how to go about doing that and any problems
19 which might arise with oaths of secrecy and those sorts
20 of things. I think that's the Board providing legal
21 advice to Mr. Hanna in the air. I think we have to see
22 what the situation is as it develops.

23 MR. HANNA: Madam Chair, if I can just
24 clarify for Mr. Freidin's benefit, my concern in
25 calling the witness is not my prerogative to do so, I

1 - understand that I do have that opportunity to call
2 anyone that I feel would be useful to the Board in
3 helping it making its decision, within certain limits.

4 MR. COSMAN: Subpoena.

5 MR. HANNA: What I was more concerned
6 about was the procedure of statements of issues and how
7 we go about dealing with those types of issues where
8 the witness is not necessarily wishing to go through
9 that exercise and prepare a statement of evidence, et
10 cetera.

11 MADAM CHAIR: All right, Mr. Hanna. What
12 we will do is we will undertake to provide a
13 clarification of our ruling on how it applies to MNR
14 personall generally being witnesses at satellite
15 hearings; is that how you are limiting it?

16 MR. HANNA: I was particularly interested
17 in satellite hearings because I can see circumstances
18 like we had in Fort Frances where there may be a local
19 event that is taking place in terms of timber
20 management, that there might be some benefit in having
21 the local, in this case district manager who was
22 intimately involved in it provide the Board with a
23 further explanation.

24 MADAM CHAIR: And you will speak to the
25 counsel of the other parties about the other two

1 matters?

2 MR. HANNA: Yes.

3 MADAM CHAIR: And if you don't -- if you
4 feel you have to bring it before the Board, then you
5 will do that?

6 MR. HANNA: Yes, Madam Chair.

7 MADAM CHAIR: Is there anything else?

8 MS. HARVIE: I am sorry, I am a little
9 uncertain as to the procedure that's being proposed.
10 You are going to provide clarification of your ruling
11 and Mr. Hanna, if he is unhappy with the result of his
12 discussion with counsel, he is going to bring some sort
13 of a motion?

14 MADAM CHAIR: He is going to have to
15 bring a formal motion before the Board for all the
16 parties to make submissions.

17 MS. HARVIE: All right. Will this be
18 then after your clarification of your order?

19 MR. HANNA: It's the second issue.

20 MADAM CHAIR: I think it's a separate
21 issue.

22 MS. HARVIE: All right.

23 MADAM CHAIR: Mr. Hanna is saying that he
24 wanted to do something at the Fort Frances public
25 hearing and didn't and wants to know if he can do that

1 in the future. I don't think the two issues are the
2 same.

3 MS. HARVIE: Thank you.

4 MR. FREIDIN: Madam Chair, may I use my
5 understanding of your earlier order in terms of
6 Ministry witnesses at satellite hearings that Ministry
7 witnesses would not be giving evidence under any
8 circumstances, either as a member of a panel or being
9 called by the Board or at the suggestion of one of
10 parties because they had some specific evidence they
11 wanted.

12 If the Board's clarification, I'm going
13 back, is that you didn't intend to be that wide in your
14 order, then I would like to reserve the opportunity to
15 make submissions as to whether there should be an
16 exception along the lines suggested by Mr. Hanna.

17 I might indicate that it is the
18 Ministry's position that there should be no exception,
19 that the broad interpretation of that order, as I
20 indicated I understood it, to be the order of the
21 Board.

22 MADAM CHAIR: Well then, Mr. Freidin, I
23 don't see any point in not getting submissions from the
24 parties on that issue then. It sounds to me like
25 you're going to want to say something about that issue

1 anyway.

2 MR. FREIDIN: Well, I am not going to
3 want to say anything if the Board agrees or determines
4 that it was its intention at the time that no Ministry
5 witnesses would be called at the satellite hearings,
6 and that was the intent of your order, your order
7 stands. That's what I want it to be.

8 I'm saying that was my understanding of
9 what the intent of the order was initially. If in fact
10 I have misread the intent, then I want an opportunity to
11 make submissions before you make a final determination
12 on that issue.

13 MADAM CHAIR: All right.

14 Is there anything else?

15 Mr. Cosman?

16 MR. COSMAN: No, thank you.

17 MADAM CHAIR: All right. We will adjourn
18 until 8:30 tomorrow morning.

19 ---Whereupon the hearing adjourned at 5:55 p.m., to be
20 reconvened on Wednesday, May 30th, 1990, commencing
 at 8:30 a.m.

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